LONG ISLAND REGIONAL STRATEGIC ECONOMIC DEVELOPMENT PLAN

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Prepared by:
Long Island Regional Planning Board

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PREFACE

Nassau and Suffolk Counties were the two fastest growing counties in the United States during the two decades following the end of World War II. In the decade between 1950 and 1960, Nassau's population doubled from almost 673 thousand to over 1.3 million, and has remained fairly stable since then. Suffolk's population rose from 276 thousand to 667 thousand during the 1950s. In the next decade it almost doubled to over 1.1 million. Continued slow population growth during the past quarter of a century brought Long Island's 1994 population to approximately 2.6 million.

The earlier rapid and often uncontrolled growth led to the creation of the Nassau-Suffolk Regional Planning Board (now known as the Long Island Regional Planning Board) in 1965. Its mandate was to conduct comprehensive planning in order to channel growth in a rational and balanced manner.

A prime objective was the preparation of a development plan to address existing problems resulting from uncontrolled growth or from actions taken by local municipalities without concern as to the impact of those actions on the larger Long Island community. The regional plan was also meant to serve as a guide for future growth.

The plan, released in 1970, was entitled <u>The Nassau-Suffolk Comprehensive Regional Development Plan.</u> It analyzed and made recommendations with respect to the physical, social, economic and environmental aspects that defined the communities of Long Island.

Its framework was dubbed the CCC Plan. In reality it was the 4-C Plan; that is to say, the plan stressed corridors, clusters, centers and conservation.

The geography of Long Island -- long, narrow and surrounded by water -- is in one sense a corridor between New York City to the west and New England to the north. Clearly, the most valuable recreation and residential locations occur along the north and south shores in an almost continuous band from the border with Queens and the extremities at Orient Point on the north fork and the Montauk lighthouse on the south fork. The most logical location for industrial and commercial development is along the center spine of Long Island, close to its major east-west transportation corridors.

In order to achieve the most efficient use of land -- economically and environmentally -- cluster development should be used wherever possible. Clustering permits combining mixed housing types while maintaining the overall permitted density. The proper use of clustering techniques is one of the most effective tools for open space preservation at no acquisition cost to the community.

The centers concept is an extension of the concept of clustering. Centers are accessible concentrations of activity. They can be of two types. One type is the single use center such as a major educational complex or a planned industrial enclave. The second type is the multi-use center containing a variety of land uses and activities. These multi-use centers can be large or small, but in every instance they include housing and shopping, and

in most cases, they also include other activities -- offices, educational institutions, transportation facilities, special services and recreation.

Implementation of the Plan during the subsequent years was reasonably successful. Most of the local governments adopted comprehensive plans based on the regional model. Zoning and design standards were improved. Overall population growth and density was brought under control. Perhaps the greatest success was in the environmental area. The counties and municipalities acquired over 50,000 acres of dedicated open space including wetlands, farms, pine barrens, waterfront parks, and other properties of unique importance.

The two areas of limited success were transportation and housing. The many recommendations for improvements in highway and mass transit were only partially implemented due to the perennial shortage of public funds. The recommendations for rental housing, particularly for moderate and low income families, was rigorously opposed by most of the local citizen groups.

At the time the original plan was promulgated, concerns over the Long Island economy were mainly those of control. The Long Island economy was sound and industrial and commercial growth was occurring without governmental incentives. The planning objectives were to tighten the reins in terms of zoning, site design and environmental standards. However, the economic growth patterns of the three decades following the end of World War II began to wane in recent years. The stabilization of population growth coupled

with a strong inflationary increase in land values and housing costs slowed the construction industry -- once the bellwether of the Long Island economy -- to a trickle. More than half of those employed in construction lost their jobs. The relatively small decline in manufacturing jobs during the 1970's was offset by dramatic growth of the service sector during both the 1970s and 1980s. However, with the end of the cold war, Long Island's economic situation changed dramatically. There was a hemorrhaging of defense-related work. Over 100,000 jobs were lost in all sectors of the economy since 1988. Many were high-paying manufacturing jobs. Since every manufacturing job represents a multiplier impact of at least two to one, the impact upon the overall economy has been significant. As a result, Long Island has been slow to recover from the recent recession and the options for a quick recovery are quite limited.

The downsizing of the defense sector is part of the major structural changes occurring on Long Island. Many white-collar workers are being displaced from office-type activities due to automation. Moreover, there are significant local impediments to a sound economy. These include high taxation, high energy costs, transportation inefficiencies, lack of affordable housing, and a somewhat negative business climate.

These problems lead to the inescapable conclusion that future economic growth and development cannot be taken for granted. Long Island must pursue a set of well-targeted economic development strategies. The economic problems facing Long Island are

interrelated. Their solution requires comprehensive, long-range strategic economic planning.

As a first step in this planning process, existing economic conditions were inventoried and assessed. This underscores Long Island's strengths and weaknesses. As a second step, we projected the range of possibilities and/or probabilities for each area of the economy under evaluation. We then suggested various economic development scenarios and assessed the consequences of each scenario. The final step is to promulgate an implementation program to achieve the objectives of the plan.

The strategic economic development program and recommendations presented in this volume provide a foundation for stable future economic growth and development.

December 16, 1993

Lee E. Koppelman

Pearl M. Kamer

Summary of Recommendations

This section summarizes the plan's key recommendations:

Manufacturing

1. Long Island must move forcefully to exploit its potential for non-defense high-technology activities. This will require the active assistance and support of the Federal government.
2. One or more state-of-the-art teaching factories, funded in part by the Federal government but representing a cooperative effort between industry, government and academia, could help to revitalize Long Island's manufacturing base and encourage the development of dual-use technologies. The concept of a teaching factory is analogous to that of a teaching hospital. It would allow Long Island's manufacturers, particularly its small and medium-sized manufacturers, to explore new manufacturing practices, technologies, processes, and equipment.
3. Long Island should target certain strategic manufacturing industries for support. These include biotechnology and biomedical research and information technology. In order for these strategic industries to expand, greater emphasis must be placed on the process of technology transfer. These industries can help take up the slack caused by declines in defense employment.
4. It is important that Long Island retain the unique scientific and technical skills of displaced defense workers within the Long Island economy. Defense industry workers have an

inherent advantage in learning the technologies needed by the strategic industries because many of them are trained quantitatively. Recycling displaced defense workers poses a unique challenge to Long Island's educational institutions.

5. The availability of air cargo services can be a key element in creating jobs. The Long Island economy and that of eastern Suffolk would benefit greatly even if only limited commercial air cargo service were available at Calverton Airport. Such service could be the catalyst for new activities at the airport that would generate more than 12,000 on-airport jobs at full development and generate annual salaries of $188 million.

6. A defense diversification working capital loan pool is needed. The Suffolk County Executive has allocated $500,000 for a loan loss reserve fund. Nassau County should contribute a like amount and the state should contribute an additional $2 million. In the aggregate, this $3 million loan loss reserve fund will encourage a consortium of banks to provide $20 million in working capital loans to Long Island industry.

7. The Long Island delegation should call upon the New York State Legislature to fund the highly-effective Industrial Effectiveness Program at higher levels. The program, created in 1987, is administered by the New York State Department of Economic Development and provides technical, financial and educational assistance to qualified manufacturing firms and industry groups. During 1993, the program was funded at $2

million statewide. Long Island alone needs $4 million annually to make the program available to all manufacturing firms seeking assistance.

8. Tax abatements can be more effectively utilized to promote industrial and business development on Long Island. Suffolk County's proposal that the State Legislature enact a Strategic Industry Real Property Tax abatement program should be supported. It provides a framework for counties to work with other local governments to target tax abatements to key strategic industries that are consistent with their economic development plans.

Education

1. There is a clear need to redefine the respective missions of Long Island's institutions of higher education. They will be asked to assume new functions and to respond to new demands during the 1990s.

2. Long Island needs a first-rate public engineering college that offers a diverse array of advanced graduate programs. Continued emphasis on science, engineering and technology is needed in a region that aspires to compete by commercially exploiting state-of-the-art technologies. The survivability of Long Island's manufacturing base and the promise of its high technology future depend on access to world-class intellectual resources in science and engineering.

3. An "ivory tower" mentality that denigrates practical hands-on training could be a major obstacle in utilizing the

intellectual resources of Long Island's universities to further regional economic development. What is required is a pragmatic approach that will effectively equip large segments of Long Island's adult population with the skills needed by regional employers.

4. Long Island colleges could develop a more entrepreneurial approach in interacting with local businesses and government agencies. University-based consulting groups that offer fee-based services could greatly enhance the competitiveness of local businesses and the efficiency of local governments. Joint university-industry research arrangements could also be mutually beneficial.

5. If Long Island colleges are to assume new functions in support of the regional economy, they must have the financial ability to do so. What is needed is a state fund dedicated to university-oriented initiatives and projects. All of the state's colleges could then compete against each other for awards from this fund based on the merits of their projects.

6. Long Island's colleges should define as precisely as possible what an educated person should know. They should institute proficiency requirements in subjects such as writing, math, and foreign languages. The return to "value added" testing is a national phenomenon and should be adopted on Long Island.

7. There is an urgent need to maintain a balance between public and private institutions of higher education on Long Island. In recent decades, Long Island's colleges expanded

2. Local governments can use tax incentives to encourage developers to incorporate dependent care facilities within their non-residential buildings. Property tax abatements could also be given to existing offices and industrial buildings that make renovations to incorporate dependent care facilities. Another option is to allow builders extra feet of commercial or industrial space beyond current zoning limits for each square foot that is set aside for a dependent care facility.

3. Head Start programs sites should be considered for consortium child care facilities. This would eliminate most start-up costs.

4. Family day care is an alternative to center-based care, particularly for users who want to set down support systems within their own communities. Long Island employers can promote family day care by supporting those organizations that are charged with developing family day care facilities and networks. On Long Island, these include the Day Care Council of Nassau County, the Child Care Council of Suffolk, and the Corporate Initiative for Child Care and Elder Care.

5. Long Island employers can also implement "family responsive" policies to make it easier for their workforce to arrange for dependent care. Such policies include financial subsidies for dependent care services, a dependent care assistance plan (DCAP), and a flexible benefits program. They also include more flexible work schedules and family leaves.

6. New York State regulations regarding financial aid for day care centers should be more flexible so as to allow a broader range of business sponsors. New York State should also consider establishing a child care loan guarantee fund to guarantee private-sector loans made to day care providers.

7. A closer partnership between the Long Island financial community and Long Island child care providers is needed. Providers must learn to develop business plans that satisfy the banking community. Banks should become less reluctant to make loans to economically-viable dependent care providers. The financial community should come to regard the provision of dependent care services as a business and not simply as "babysitting."

Tourism

1. It is necessary to market the hospitality industry beyond Long Island and its immediate environs. Hotel room taxes specifically dedicated to the promotion of tourism can produce the revenues needed for such a campaign.

2. Long Island's hospitality industry would be helped immeasurably if the 5% state tax on rooms costing more than $100 were revoked or if a significant portion of the tax was returned to Long Island for tourism promotion. A rebate of the tax would help Long Island tourism officials compete effectively with other tourist regions that are raiding the tri-state area for tourist business. Revocation of the tax

would give Long Island officials greater leeway in levying local hotel-motel fees. Suffolk has already enacted a 0.75% hotel room tax specifically dedicated to tourism promotion. Nassau should do likewise.

3. There is overwhelming interest in shopping as a recreational pastime. Long Island should market its factory outlets, flea markets and discount malls more effectively. Brochures listing these outlets, their hours of operation and travel directions would be useful.

4. Organized wine-tasting tours and other "happenings" centered around Long Island's vineyards would enhance tourism and solidify Long Island's identity as a major wine producing area. They would also boost multi-season tourism because fall is the most popular season for trips to the vineyards.

5. Long Island can capitalize on the interest in sports by specifying designated months as "tennis month" or "golf month". World champion players could be invited to play in local tournaments. If these tournaments were televised nationally, Long Island's image as a desirable travel destination would be substantially enhanced.

6. Long Island can use its harbors and docks to greater advantage. One or more of Long Island's harbors could be transformed into a seaport of the colonial period, akin to Mystic Seaport in Connecticut.

7. Long Island's contributions to the field of aviation could be celebrated with "open skies" events complete with air shows,

sky writing and flyovers by antique planes.

8. County fairs complete with country music, food booths, games and animal displays could be expected to draw large numbers of visitors.

9. Long Island possesses a storehouse of scientific talent in its businesses, colleges and universities. It could display this talent and at the same time attract visitors by hosting science fairs.

10. Long Island can better utilize its performing arts facilities. For example, it could sponsor a "festival of the arts" to attract visitors.

11. Visitor interest in Long Island's historical attractions could be stimulated by designating "history months" during which open houses at Long Island's historical homes and churches would be hosted by persons in period costumes.

12. There is considerable interest in seasonal events such as apple picking or fall foliage tours. Long Island's hotels, motels, and resorts could sponsor fall foliage "getaway" weekends during which there would be significant discounts on hotel rooms, car rentals, and selected recreational activities.

13. Efforts should be made to promote Long Island's off-season attractions. Warm weather sports such as golf, tennis, volleyball, basketball and swimming can be adapted to indoor facilities.

14. The population of the northeast and the New York Metropolitan

Region is characterized by relatively high educational levels so that self-improvement vacations featuring adult education courses in a leisure setting should attract visitors.

15. Highway congestion and parking problems can be a powerful deterrent to tourism. Additional public transit is needed specifically to serve business visitors and leisure travelers. A "convention loop" jitney linking major business hotels and convention centers is one possible solution. Antique trolleys on wheels could also circulate through tourist areas. Greater utilization of the Long Island Railroad for leisure trips to the east end and a better interface between the Long Island Railroad and surface public transportation on the east end is also needed.

16. Owners and employees of travel-related businesses should be educated about the importance of treating travelers with courtesy. These hospitality training seminars would be useful in acquainting both the industry and the public with the value of tourism as an economic development tool.

17. Long Island's institutions of higher education should develop more extensive travel and tourism curricula to assure that Long Island's travel-related industries have access to a well-trained labor force.

18. Future tourism promotion efforts should be narrowly targeted to specific groups of visitors including foreign travelers, the relatively affluent older population, and families with young children. Such targeted marketing efforts are needed

in addition to a general marketing program.

Energy Use and Conservation

1. Long Island should promote energy conservation of all fuels. A "conservation facilitator" should be appointed to promote conservation and to assure that Long Island fully utilizes State and Federal funding for conservation.
2. An energy audit should be required before any home can be sold. The audit results should include a prescription for any corrective actions needed to achieve conservation.
3. Conservation measures in county and town buildings should be implemented as examples of energy-efficient construction and maintenance.
4. Cogeneration projects should be encouraged through legislation favorable to independent power producers. Such legislation should assure a "level playing field" for independent power producers vis-a-vis the New York Power Authority.
5. Energy conservation programs should be decoupled from electricity rates. Rate increases stemming from conservation should be allocated to the customers or class of customers that benefits from conservation.
6. It is necessary to improve the opportunities for weatherization of low-income homes on Long Island.
7. In order to assure an increased supply of natural gas, the Iroquois Pipeline as well as any upgrades to the pipeline should be supported. Other natural gas pipelines to Long

Island should also be encouraged.

8. It is essential to bring more hydroelectric power to Long Island. As part of this process, the New York State Energy Research and Development Authority should be asked to sponsor a study of how imports of Quebec hydropower to Long Island can be increased.

9. In order to reduce oil consumption on Long Island, employers should be helped to establish company commuter programs. Such programs would help employees set up car and van pools and coordinate work hours. Establishment of a fourth lane on the Long Island Expressway as a high occupancy lane for car and van pools and buses is also needed. Telecommuting and the use of compressed natural gas as a motor fuel for fleet vehicles should also be encouraged.

Industrial Land Use

1. Suffolk County, with more than 16,000 acres of available industrially-zoned land, is overzoned for industry and only the most suitable sites should be developed. With the large amount of available industrial land, environmentally sensitive land can be avoided.

2. Road access should be improved to provide safer and more efficient access to industrial areas.

3. The Long Island Expressway should be upgraded to handle the heavy volume of truck traffic. There is a need for continuous service roads from Exit 65 to Exit 68. This would serve the

emerging industrial center along Horse Block Road in Yaphank as well as industry located adjacent to Exit 68.

4. The Hauppauge industrial area has more acreage devoted to industry than any other community on Long Island. To better serve this industrial area, it would be useful to widen the Motor Parkway Overpass at Exit 55, Route 111 from Motor Parkway to Nesconset Highway, and Motor Parkway from LIE Exit 55 to Exit 57.

5. Excess industrial square footage on Long Island should be recycled before adding more industrial space. Until a significant amount of vacant space is absorbed, the Industrial Development Agencies should carefully evaluate loan applications for proposed new industrial projects.

6. Since Long Island is overzoned for industry, Long Island towns should avail themselves of the opportunity to remove acreage from industrial zoning.

7. Residentially-zoned areas that are totally surrounded by industrial land, as in Melville, should be rezoned industrial to avoid land use conflicts.

8. Industrially-zoned land which contains housing in sound condition should be changed to residential zoning to avoid industrial and commercial intrusions into the neighborhood.

9. Industrial zones along the waterfront should be considered for a change to a marine commercial category. Frequently, the original intended uses of the industrial category, such as oil tanks and ship building, have become obsolete.

Commercial Land Uses

1. There are many opportunities within CBDs for the reconstruction of existing structures or the reuse of underutilized sites.
2. A regional mall in Yaphank is now a viable opportunity and is needed to fill retail demand in Brookhaven Town.
3. Many innovative retail developments that have been used in other parts of the country should be considered for Long Island. These include themed retail centers and mixed use centers that include a retail segment. Themed retail centers, such as auto malls, emphasize a specific product. Mixed uses are retail configurations that provide consumer convenience. The combination of offices and retail space or a hotel and a shopping mall are examples of mixed uses.
4. Continued population growth in Suffolk may require a maximum of three additional community and neighborhood retail developments. Nassau can support additional high quality retail space but there is no general need for additional retail space.

Government and Taxation

1. Currently, all property taxes in Suffolk County are collected in two equal payments. The first half is due by January 10 and the second half by March 31. This schedule does not coincide with the revenue needs of the school districts or the

County. It results in excessive interest costs for the County and its school districts. The system of property tax collection and payment should be changed to a 2+2 system. Homeowners would pay their general taxes in January and May. School tax payments would be split out and paid in September and March of each year. It is recommended that the Suffolk County Legislature prepare a home rule message requesting this change by act of the State legislature and that the town tax receivers in Suffolk County have the responsibility to distribute the property tax bill to property taxpayers.

2. Suffolk County should assume responsibility for assessing property in Suffolk. This function is currently performed by the ten Suffolk towns which use different methodologies. This makes comparison difficult and equitable distribution of the tax burden impossible.
3. Since school districts of 5,000 or more pupils are most cost-effective, it is likely that economies can be realized through significant school district consolidation.
4. The Salerno Commission recommendations should be implemented.
5. The school district real property tax on residential property on Long Island should be replaced with a graduated income tax. The non-residential property tax should be continued and the dollars derived from that tax pooled and distributed on the same basis as the income tax.
6. The costs of elementary and secondary school education should be funded 100% by the State. This recommendation should be

subjected to a statewide referendum.

7. Every effort should be made to end social service functions performed by school districts in duplication of existing County services.

8. There should be a common voting date for all school districts in Nassau and Suffolk Counties.

9. The three BOCES supervisory districts in Suffolk County should be merged into one supervisory district. At least 25% of all component school districts should request a service before BOCES can submit an application for approval by the State. An audit mechanism should be established by the State Education Department to ensure that BOCES functions are properly audited and made available to the public for inspection. School districts can save money by expanding the use of BOCES itinerant services. These are services in which BOCES personnel are used as part-time employees to render services in two or more school districts.

10. The Nassau County budget deadline for submission by the County Executive should be changed from the first Monday after the first Tuesday in November to October 1st.

11. The twenty most expensive programs in the operating budgets of each county should be subjected to added scrutiny in the form of cost comparisons with other large New York State urban and suburban counties.

12. The counties should take steps toward establishing a unified purchasing network that would share contract lists among

jurisdictions, and discuss problems in shipping, standardization of quality and reliability of services. Bidding requirements are set at an unrealistically low level which requires excessive paper work and causes delays. Indexing to the rate of inflation would help overcome this problem.

13. General purpose governments on Long Island should shift to a two-year budget cycle.

14. In delivering services to preschool handicapped children, it is recommended that independent evaluators be permitted to determine the needs of the child. The purpose is to separate evaluations from service provision.

15. Certain government functions lend themselves to privatization. Areas that require special attention are: Off Track Betting, the Nassau County Medical Center, the Suffolk County Nursing Home, the Nassau County Nursing Home and all home health services.

16. Public agencies and private firms should be eligible to compete against each other for a large specified list of government functions.

17. The tax base should be broadened. Business activity should be promoted so as to ease property tax burdens.

18. Evaluations should be made with an eye toward eliminating all commissions and boards that do not have statutory or charter responsibilities. In addition, all commissions and boards created in the future should have sunset provisions.

19. Nassau and Suffolk Counties should expand the development of a digitized system of land mapping for all tax parcels in each county.

20. Certain administrative changes should be made. The budget offices of the Suffolk County Executive and the Suffolk County Legislature should be merged into one non-partisan office. The elective positions of Comptroller and Treasurer in Suffolk County should become positions appointed by the County Executive and approved by the County Legislature. One police academy should be established for both counties. Police patrols of interstate and state roads should be shifted from the county to the state.

21. Several functions that are duplicated at two or more levels of government should be consolidated so that only one level of government provides the service or function.

22. A Regional Solid Waste Council should be created to provide for regional cooperation in the construction and development of facilities for the disposal of solid waste.

<u>Highway Transportation</u>

1. Highway improvement needs currently exceed funding capabilities. Therefore, those projects that maintain Long Island's economic viability should be given the highest priority. Capacity improvement funds should be first allocated to east-west arterials that serve intra-county and intercounty commuter and commercial travel. These include the Long Island Expressway, the Northern and Southern State

Parkways, Sunrise Highway, Veterans Memorial Highway and Nesconset Highway.

2. Several major highway improvements are needed. It is recommended that continuous service roads be constructed along the Long Island Expressway to Exit 65, William Floyd Parkway. It is recommended that the Northern State Parkway be widened to six lanes to Veterans Memorial Highway and that Sagtikos Parkway be widened to six lanes between Northern State Parkway and the Heckscher Spur. A six or possibly eight-lane section of Route 110 is needed north to New York State Road 25.

3. Although the traffic congestion problem on Long Island is primarily one of region-wide capacity, there are several low-cost methods of reducing congestion. These include staggered work hours, ridesharing and greater use of public transit. Such options should be pursued.

4. Long Island has consistently received only a fraction of what it contributes in federal and state gasoline taxes and motor vehicle-related fees in the form of highway improvement funds. Long Island needs assurances that funds for highway improvements will be available on a long-term basis, that Long Island will receive more of what it contributes in motor-vehicle related fees and taxes, and that on a statewide basis, improvements are made first where the need is greatest.

5. The possibility of a New York State income tax transportation surcharge should be investigated as a source of additional highway improvement revenue.

Part I
Inventory and Current Status of the Long Island Economy

Defining the Long Island Economy: Employment and Income Generated

Nationally, various sectors of the economy can be described in terms of how much they contribute to the nation's Gross Domestic Produce (GDP). In a regional labor market, such as Long Island, the distribution of employment and income generated, by industry, describes the configuration of the economy. During the second quarter of 1992, Long Island's dominant industry in terms of both employment and income generated was the service industry. This broad industry group includes subindustries such as personal, business and health services, educational services, repair services, and amusement and recreational services. As of the second quarter of 1992, the service industries accounted for approximately 38% of Long Island employment and income generated. Retail trade accounted for 19% of Long Island jobs but for only 11% of income generated. This difference reflects the fact that many retail jobs are relatively low-paying, part-time jobs. Manufacturing was the third ranking industry in terms of jobs. It accounted for approximately 12% of Long Island employment. However, because manufacturing jobs are relatively high-paying jobs, the manufacturing sector accounted for almost 15% of the income generated by Long Island jobs. Therefore, manufacturing ranked second in importance after services in terms of income generated.

Table 1
The Relative Importance of Long Island Industries,
Second Quarter, 1992, as Measured by
Employment and Aggregate Income
(Percent Distribution)

Industry	Employment	Aggregate Income
Agriculture	0.7%	0.5%
Construction	3.8	4.2
Manufacturing	12.2	14.5
Transportation, Utilities	5.8	6.7
Wholesale Trade	7.0	8.6
Retail Trade	19.3	11.2
Finance, Insurance, Real Estate	7.9	9.3
Services	37.9	38.5
Government	4.9	6.3
Other	0.5	0.3
Total	100.0	100.0

Source: New York State Labor Department

The dominance of the service industries is evident in the following listing of Long Island's leading non-governmental employers. The list includes supermarkets, financial institutions, transportation, communications and utility firms and health care facilities. Only one manufacturer, the Grumman Corporation, remained among the ten largest employers on Long Island as of 1993. (See Table 2.)

Long Island's employment base increased from an estimated 995,000 jobs in 1980 to approximately 1,362,000 jobs in 1990, a gain of 37%. These figures include estimates of self-employed persons. Growth was spearheaded by the expansion of the service industries, notably business, health and professional services. The service industries accounted for approximately two-thirds of

the net increase in employment on Long Island during the 1980s.

Table 2
Long Island's Leading Non-Governmental Employers

Rank	Employer	Number of Jobs on Long Island	Type of Business
1	Diocese of Rockville Centre	12,500	Religious Institution
2	Grumman	11,600	Aerospace Manufacturer
3	North Shore Univ. Hospital	7,250	Medical Care
4	New York Telephone	6,865	Communications
5	Long Island Lighting Company	6,526	Utility
6	Long Island Railroad	6,500	Transportation
7	Waldbaum's	6,000	Supermarket
8	Chemical Banking Corporation	5,540	Financial Institution
9	Long Island Jewish Medical Ctr.	5,385	Medical Care
10	King Kullen	4,500	Supermarket

Source: Long Island Business News, April 12, 1993

Within business services, credit reporting and collection firms, personnel supply firms, firms providing computer and data processing services, and firms providing protective services showed the strongest growth. Medical offices, hospitals, medical and dental laboratories, and firms providing home health care services were the fastest growing elements of the health services industry. There were also substantial employment gains in professional services, a category that includes legal services, social services, engineering and architectural services, accounting and bookkeeping services, research and testing services, and management and public relations services.

Long Island's employment losses during the 1980s were concentrated in manufacturing. There were significant losses in

electronics and aircraft and parts. This has raised concern that Long Island may be losing high-paying manufacturing jobs and replacing them with low-paying service jobs. An analysis of the data suggests that just the opposite occurred during the 1980s. Declining manufacturing industries such as communications equipment and aircraft and parts were characterized by relatively high annual salaries -- $29,735 and $44,513 -- respectively in 1990. However, these industries are being supplanted by industries paying comparably high annual wages: engineering and architectural services, $44,653; computer and data processing services, $33,075; offices of medical doctors, $45,390. These findings suggest that the Long Island economy is moving inexorably toward high-wage, high-skilled jobs and that there are likely to be fewer job opportunities for workers without the requisite occupational skills.

The Historical Perspective: Long Island's Changing Demography and Labor Force

Population. Long Island's population doubled during the 1950s. Nassau added approximately 630,000 people; Suffolk grew by approximately 390,000. Growth slowed to about 590,000 people during the 1960s, and the focus of growth shifted to Suffolk County. Between 1960 and 1970, Nassau gained 130,000 people and Suffolk added 460,000. During the 1970s, Nassau's population started to decline while Suffolk's population growth moderated. Between 1970 and 1980, Nassau's population loss of 110,000 persons was more than offset by Suffolk's gain of 160,000 people. Nassau's

population loss was largely attributable to declines in average household size as children matured and moved away. See Graph 1.

Long Island's population has been relatively stagnant since the mid-1970s, when it leveled off at about 2.6 million people. There have also been significant changes in the racial composition of the population. Between 1980 and 1990, Long Island's white population declined by 84,000 persons, or about 4%. Its black population increased by 31,000 persons, or 19%. Persons of Hispanic origin increased by 63,000, or 62%. Long Island's Asian population rose by 38,000 persons. Approximately 2.5 times as many Asians lived on Long Island in 1990 as in 1980.

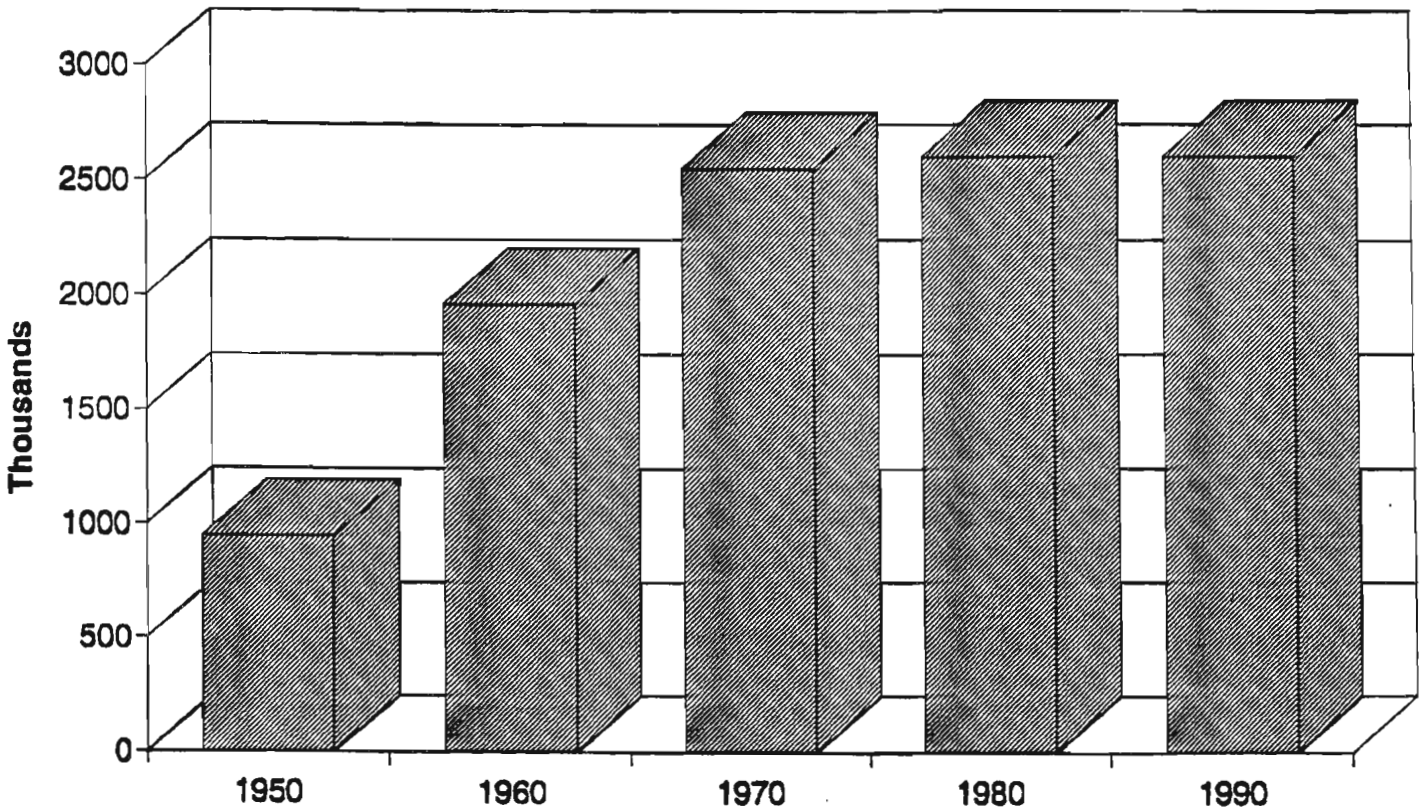
As of 1990, Long Island ranked as the tenth most populous U.S. Metropolitan Statistical Area. Its population is currently larger than that of twenty states. See Graph 2.

Long Island's population aged substantially during the 1980s. Between 1980 and 1990, the number of Long Island residents below age twenty declined by 158,000 or 19%. The number of persons age 65 and older increased by 68,000 or 27%. Long Island's working age population, those between ages 20 and 64, increased from 1.5 million to 1.6 million, a gain of less than 7%. In 1990, the median age of Long Island's population was 34.9 years, an increase of three years since 1980. The median age in Nassau County is now higher than that of the State of Florida. See Graph 3.

Labor Force. Long Island's resident labor force increased from 1,230,000 to 1,389,000 between 1980 and 1990, a gain of 159,000 or 13%. Changes in the racial composition of the labor

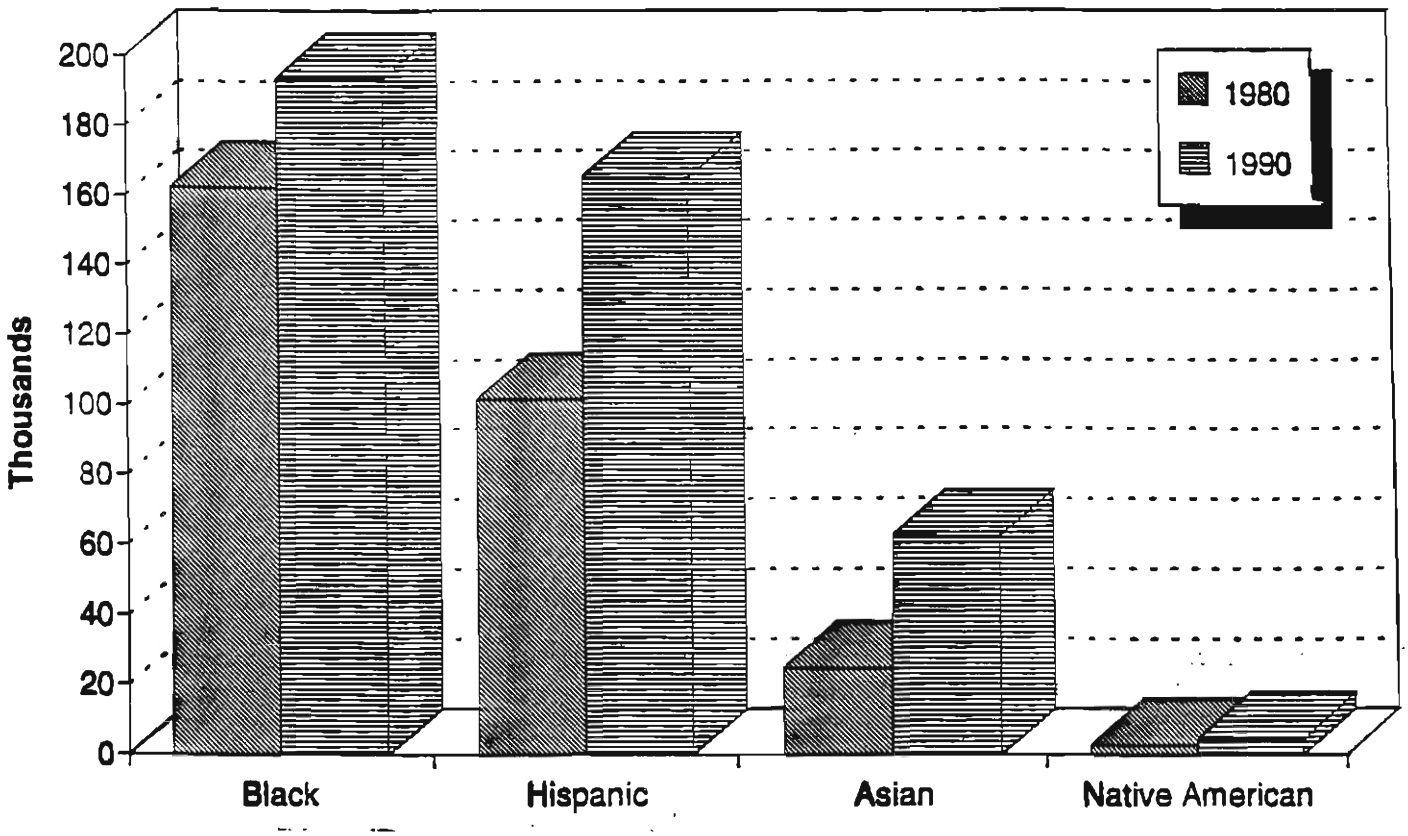
Graph 1

Long Island Population
1950-1990



Source: U.S. Bureau of Census

Graph 2
Long Island
Minority Population

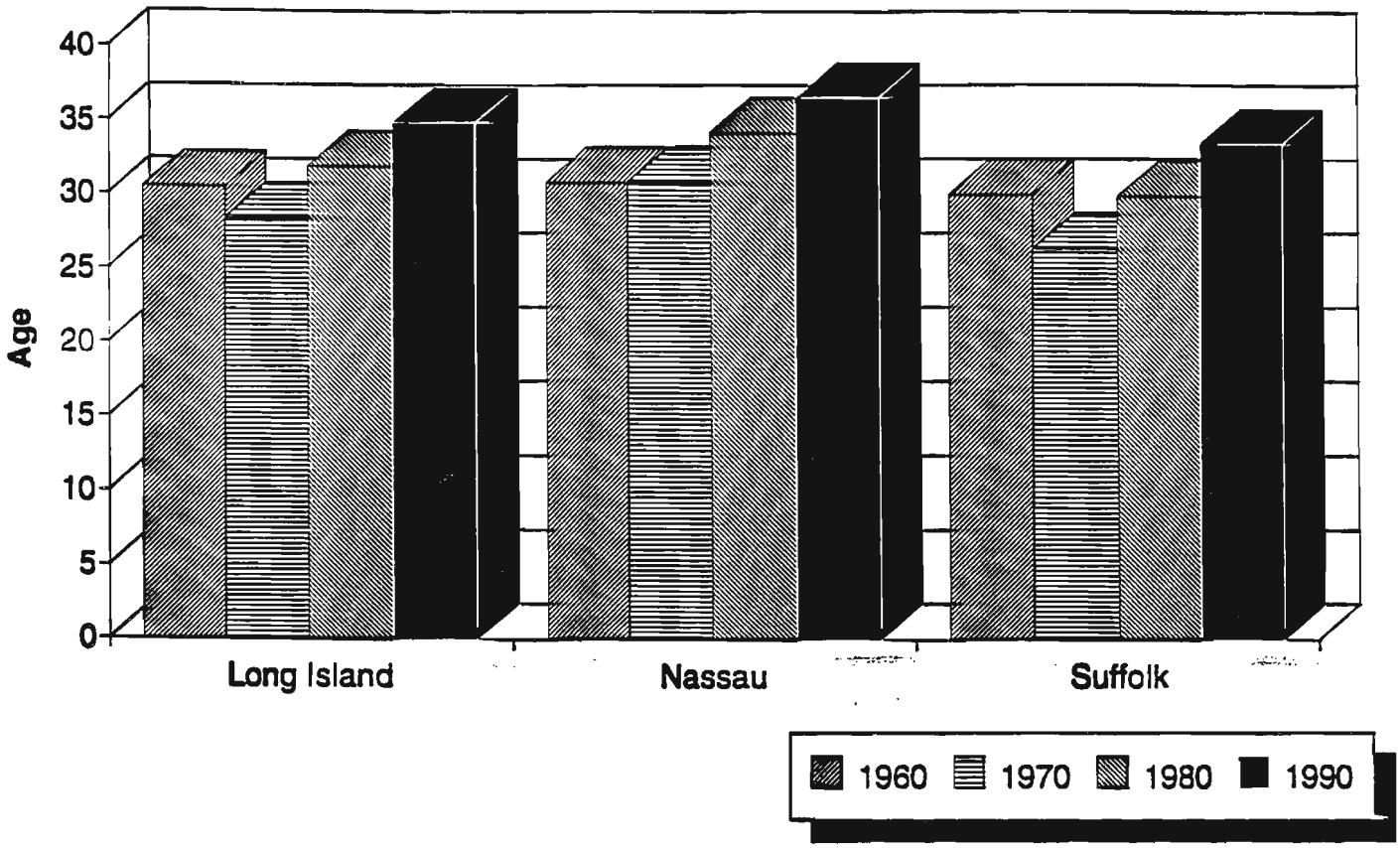


* Racial Groups do not include Hispanics

Source: U.S. Bureau of Census

Graph 3

Long Island
Median Age



Source: U.S. Bureau of Census

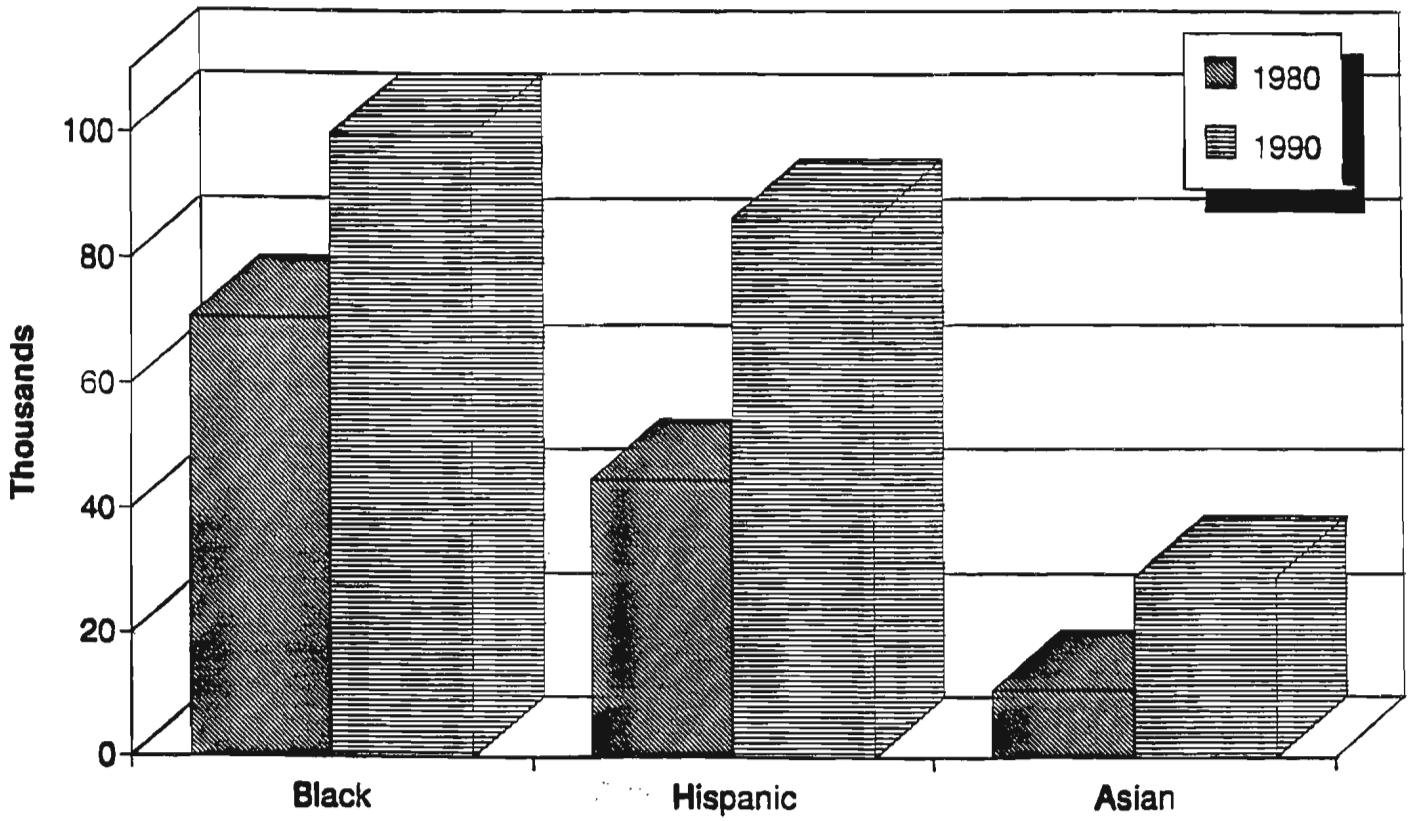
force during the 1980s mirrored changes in the racial composition of Long Island's population. That is, racial minorities accounted for a larger share of Long Island's resident labor force in 1990 than in 1980. Between 1980 and 1990, the number of whites in the labor force increased by 8%, the number of blacks by 41%, the number of Hispanics by 93%, and the number of Asians by almost 179%. Blacks accounted for 7% of Long Island's civilian labor force in 1990, but for 18% of the increase in the civilian labor force between 1980 and 1990. Hispanics accounted for 6% of the civilian labor force in 1990 but for 26% of the increase in the civilian labor force between 1980 and 1990. Asians accounted for 2% of the civilian labor force in 1990, but were responsible for 12% of the increase in the civilian labor force between 1980 and 1990. See Graph 4.

Labor force participation rates, which denote the proportion of the working age population that participates in the labor force, varied by race. Hispanics were characterized by the highest labor force participation rate, 75%; followed by blacks, 70%; Asians, 68%; and whites, 67%. Among males, the participation rate was 85% for Hispanics, 79% for Asians, 78% for whites, and 74% for blacks. Among females, the participation rate was 67% for blacks, 65% for Hispanics, 58% for Asians, and 57% for whites.

The occupational composition of Long Island's resident labor force also changed during the 1980s. The number of white-collar workers -- managers, professionals, technicians, sales and administrative support workers -- increased by 161,000 persons or

Graph 4

Long Island
Civilian Labor Force



Source: U.S. Bureau of Census

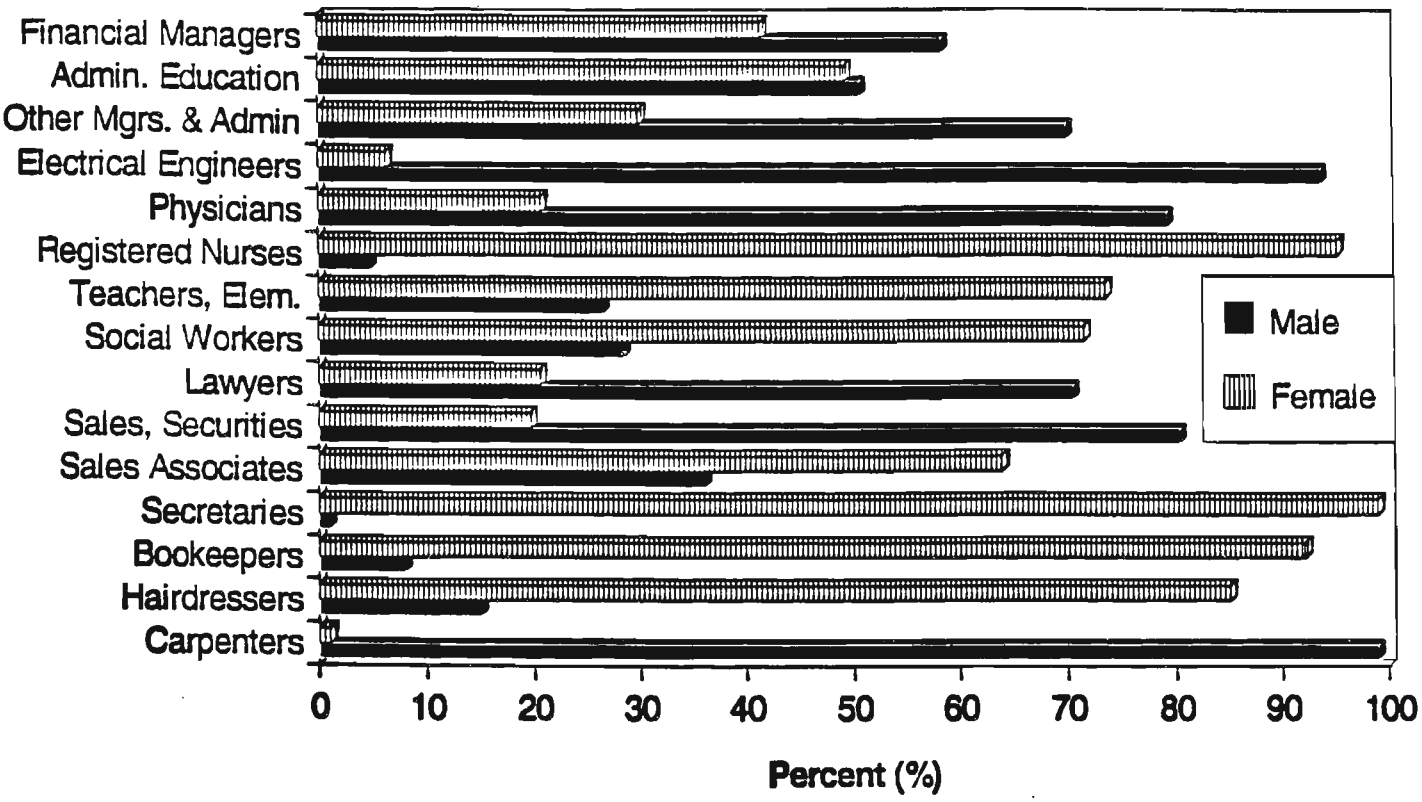
22%. The number of service workers increased by 13,000 or 10%. Those engaged in agriculture or fishing increased by 1,600 or 13%. However, the number of blue-collar workers -- precision craft and repair workers, factory operatives, fabricators, and laborers -- declined by 13,000 or 5%. These shifts reflect the fact that job opportunities for blue-collar workers have been declining while job opportunities for white-collar workers have been increasing.

The 1990 census clearly showed that some elements of the Long Island labor force continue to be overrepresented in declining blue-collar occupations and in low-paying service occupations. For example, blacks who comprised 7% of Long Island's civilian labor force nevertheless accounted for 26% of Long Island's private household workers, 14% of its service workers, and 9% of its factory operatives. Hispanics comprised 6% of Long Island's civilian labor force but accounted for 30% of all private household workers and for 23% of all factory operatives.

Women accounted for almost 45% of Long Island's civilian labor force in 1990 but were responsible for 74% of the growth of civilian labor force between 1980 and 1990. Although Long Island women have started to move into non-traditional occupations such as medicine or law, they nevertheless remain overrepresented in several traditional and generally low-paying "women's fields". These occupations include elementary education, secretarial work, and social work. See Graph 5.

It is clear that women and racial minorities are a growing segment of the Long Island resident labor force. As long as they

Graph 5
Occupation by Percent (%)
Male and Female - 1990



Source: U.S. Bureau of Census

continue to cluster in low-paying or slow-growing occupations, their economic progress will be limited.

The Economic Linkages Between the Manufacturing and Service Sectors

The rapid growth of jobs on Long Island during the 1980s masked the fact that employment growth had become unbalanced. Service employment expanded strongly while manufacturing employment declined. Some analysts claim that this growth pattern reflects the natural evolution of the Long Island labor market from an industrial into a post-industrial economy. They suggest that Long Island can enjoy a sound economy based primarily on service-producing jobs. However, there are complex, circuitous and often hidden relationships between the manufacturing and the service-producing industries. For example, some service firms are located on Long Island to be close to their manufacturing customers. Therefore, the loss of manufacturing jobs could trigger a loss of service jobs as well.

The mechanism whereby a change in output or employment in one industry affects the level of output or employment in other industries is known as the multiplier effect. The impact of the original increase (or decrease) in output or employment is multiplied through successive rounds of business transactions so that the ultimate effect on output, earnings or employment is actually a multiple of the original change. Multipliers can operate upward or downward.

The following analysis utilizes a series of input-output

multipliers that describe interindustry relationships within the Long Island economy. An input-output table shows the industrial distribution of inputs purchased and outputs sold for each industry. This makes it possible to identify the industries from which Long Island's electronics industry, or any other industry, purchases its inputs and the industries to which it sells its output.

A key question is the extent to which changes in manufacturing output affect output, earnings, and employment throughout the Long Island economy. The input-output multipliers provide definitive answers to this question:

The Food Industry. The multipliers indicate that a $100 increase in output in the food industry would raise total Long Island output and earnings by $153 and $39 respectively. This output increase includes the original $100 output increase within the food industry as well as induced output increases in other industries. A $1 million increase in food output would create 15 new bi-county jobs.

Textiles and Apparel. A $100 increase in textile output would raise total bi-county output and earnings by $156 and $40 respectively; a $1 million output increase would create 18 additional jobs. A $100 increase in apparel output would raise bi-county output and earnings by $169 and $50 respectively; a $1 million increase in apparel output would create 25 new jobs.

Paper, Printing and Publishing. A $100 increase in paper industry output would cause total bi-county output and earnings to

rise by $150 and $36 respectively; a $1 million increase would create 14 new bi-county jobs. A $100 increase in output within the printing and publishing industry would raise bi-county output and earnings by $186 and $61 respectively; a $1 million output increase would create 23 new bi-county jobs.

Chemicals, Rubber and Leather Products. A $100 increase in output within Long Island's chemical industry would raise total Long Island output and earnings by $171 and $38 respectively; a $1 million output increase would create 13 new bi-county jobs. A $100 output increase in the rubber and leather goods industry would raise Long Island output and earnings by $162 and $43 respectively; a $1 million output increase would generate 19 new jobs.

Lumber and Furniture, Stone, Clay and Glass Products. If output within the lumber and furniture industry expands by $100, total Long Island output and earnings would rise by $171 and $52 respectively; a $1 million output increase would create 25 new jobs. A $100 increase in output in stone, clay and glass products would raise Long Island output and earnings by $170 and $50 respectively; a $1 million increase would create 20 new jobs.

Primary and Fabricated Metals. A $100 output increase in primary metals would raise bi-county output and earnings by $156 and $37 respectively; a $1 million output increase would create 13 bi-county jobs. A $100 output increase in fabricated metals would raise bi-county output and earnings by $163 and $47 respectively; a $1 million output increase would create 19 new jobs.

Electrical and Non-Electrical Machinery and Equipment. These

are two of Long Island's largest and most significant manufacturing industries. A $100 increase in output within non-electrical machinery would cause total bi-county output and earnings to increase by $181 and $61 respectively; a $1 million output increase would generate 21 new jobs. A $100 output increase in the electrical equipment (electronics) industry would raise Long Island output and earnings by $196 and $69 respectively; a $1 million output increase would create 25 new jobs.

Transportation Equipment (Aircraft and Parts). Aircraft and parts is a pivotal, but declining, industry. A $100 increase in industry output would increase total output and earnings within the Long Island economy by $206 and $69 respectively. This is the highest output multiplier of any manufacturing industry studied. A $1 million output increase would create 23 new bi-county jobs. These multipliers also work in reverse as industry output declines.

Instruments. A $100 increase in output within Long Island's instruments industry would raise bi-county output and earnings by $181 and $59 respectively. A $1 million output increase would generate 20 new jobs on Long Island.

The foregoing analysis shows that each Long Island manufacturing industry is characterized by a unique and different multiplier. Therefore, the identical change in output in different industries will have markedly different effects upon the Long Island economy. The highest multipliers were associated with transportation equipment (aircraft and parts), electric and electronic equipment, printing and publishing, instruments, and

non-electrical machinery. With the exception of printing and publishing, each of these industries is highly defense-dependent.

The multipliers also demonstrate that in general, two-thirds of the impact of any change in manufacturing output occurs within the manufacturing sector and one-third "spills over" into the service-producing sector. The explanation is that the manufacturing industries purchase some of the output of the service-producing industries. For example, not only does the food industry purchase containers and food labels from the paper, printing and publishing and fabricated metals industries but it also utilizes the services of wholesalers and retailers and it purchases advertising from the business services industry. See Graph 6.

The analysis confirms that changes in bi-county manufacturing activity have significant spillover effects upon Long Island's service-producing industries. The impact of a decline in manufacturing output is not confined to the manufacturing sector but reverberates throughout the economy. It follows that Long Island cannot maintain a viable service economy in the face of pervasive manufacturing declines. A significant loss of manufacturing jobs will ultimately trigger a loss of service jobs as well.

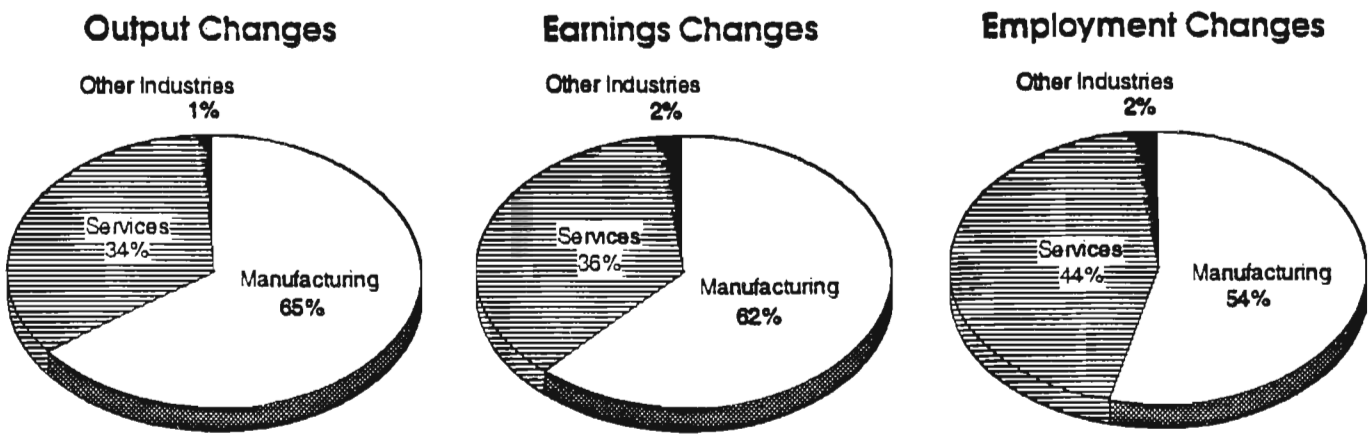
Changes in output within the service-producing industries reverberate throughout the Long Island economy to a lesser extent.

Transportation, Communications, Utilities. A $100 increase in output within the transportation industry would raise total Long

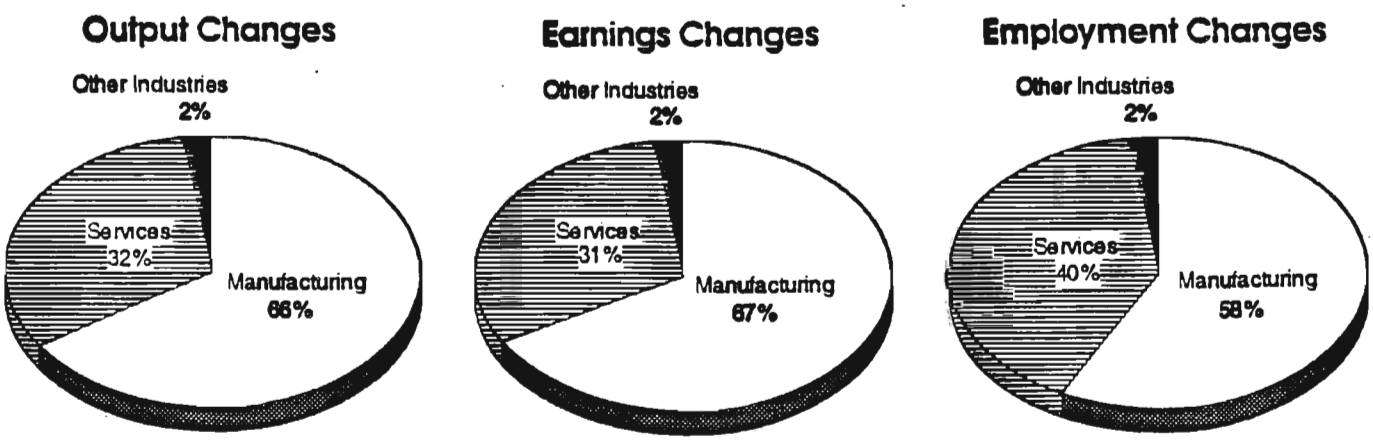
Graph 6

The Impact of Changes in Output, Earnings and Employment in Key Manufacturing Industries on the Long Island Economy*

1. Printing and Publishing



2. Electronics and Electrical Machinery



*Shows how much of the impact of a change in output, earnings, and employment in each of these industries remains within manufacturing and how much "spills over" into the service sector.
Source: Long Island Regional Planning Board

Island output and earnings by $193 and $79 respectively; a $1 million output increase would create 31 new bi-county jobs. A $100 increase in output within the communications industry would cause Long Island output and earnings to increase by $153 and $44 respectively; a $1 million output increase would create 14 additional jobs. An output increase of $100 in public utilities would cause total Long Island output and earnings to rise by $136 and $24 respectively; a $1 million increase in utilities output would generate only 8 new bi-county jobs. The utility industry is characterized by a high ratio of capital-to-labor. Such capital intensive industries can expand output without generating many additional jobs.

Wholesale and Retail Trade. A $100 increase in output within wholesale trade would raise total Long Island output and earnings by $180 and $67 respectively; a $1 million output increase would create 25 additional jobs on Long Island. A $100 increase in retail output (sales) would raise Long Island output and earnings by $186 and $77 respectively; a $1 million output increase would create 45 new jobs. Many of these would be part-time jobs because the retail sector is characterized by a high ratio of part-time to full-time employment.

Finance, Insurance, and Real Estate. A $100 increase in output within the finance industry would raise Long Island output and earnings by $182 and $61 respectively; a $1 million output increase would generate 19 additional jobs. A $100 increase in insurance industry output would raise Long Island output and

earnings by $212 and $82 respectively. Thus, the insurance industry had the highest output multiplier of any of the service-producing industries studied. A $1 million increase in insurance industry output would create 29 additional Long Island jobs. An output increase of $100 in the real estate industry would cause total Long Island output and earnings to increase by $137 and $15 respectively; a $1 million output increase would create 7 new jobs. Real estate output (sales) can rise significantly without creating additional jobs. For example, if the number of housing units sold remains the same but the dollar value of each rises, output would increase without generating a need for additional workers.

Hotels and Lodging Places, Amusements. If output in these industries were to rise by $100, total output and earnings on Long Island would increase by $182 and $56 respectively; a $1 million output increase would create 29 new jobs.

Personal, Business, and Health Services. An output increase of $100 within personal services would cause Long Island output and earnings to rise by $181 and $72 respectively; a $1 million output increase would create 58 new jobs. A $100 output increase in business services would raise Long Island output and earnings by $186 and $80 respectively; a $1 million output increase would generate 31 bi-county jobs. A $100 increase in output within the health services industry would raise Long Island output and earnings by $220 and $91 respectively; a $1 million output increase would create 37 additional Long Island jobs. The earnings

multiplier for health services is the highest of any of the service-producing industries studied.

The service-producing industries, like the manufacturing industries, are each characterized by unique and different output multipliers. However, output changes in the service-producing industries do not have significant "spillover" effects upon the remainder of the economy. Only about 5% of the changes in economic activity induced by changes in service-producing output occurred in manufacturing. See Graph 7.

The Manufacturing Sector

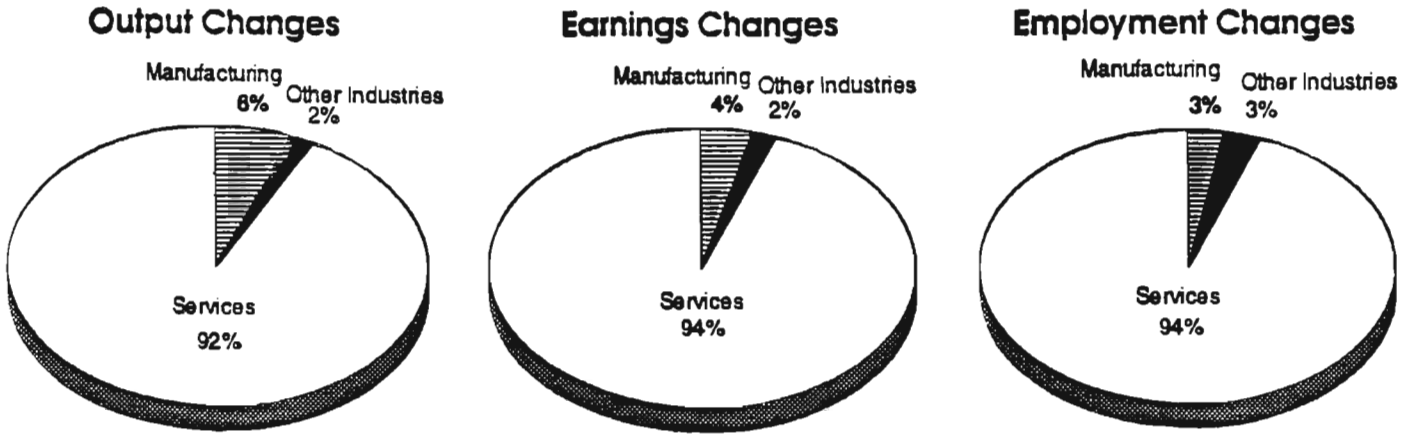
The foregoing analysis confirms that a vibrant manufacturing sector is vital to the health of the Long Island economy. However, manufacturing activity on Long Island has been declining rapidly in part because of the on-going defense build-down.

The Defense Sector. The United States is currently engaged in a long-term defense build-down resulting from the end of the cold war. However, the build-down actually started with the passage of the Balanced Budget and Emergency Deficit Control Act of 1985 also known as Gramm-Rudman-Hollings I. Gramm-Rudman-Hollings sought to cap expenditures as a means of narrowing the Federal budget deficit.

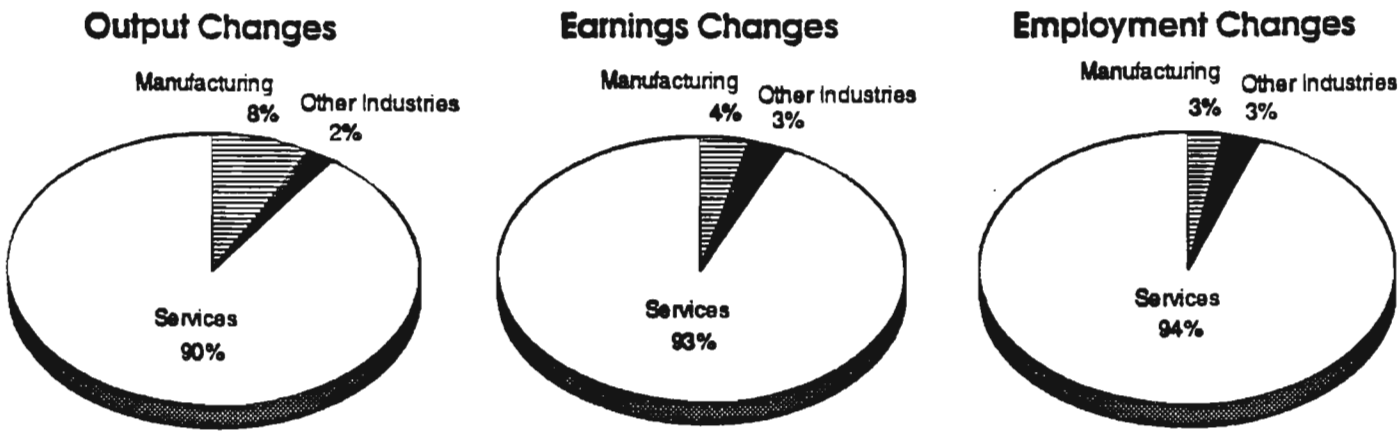
Between fiscal years 1985 and 1993, real defense outlays fell by 29%. Under the Clinton Administration's proposed budget, funding for national defense is projected to fall from $273 billion

The Impact of Changes in Output, Earnings and Employment in Key Service-Producing Industries on the Long Island Economy*

1. Business Services



2. Health Services



*Shows how much of the impact of a change in output, earnings, and employment in each of these industries remains within the service sector and how much "spills over" into the service sector.
Source: Long Island Regional Planning Board

in fiscal 1993 to $227 billion in fiscal 1997, a further decline of 17%. The geographic impact of this decline will be concentrated in ten states, including New York State. These states and their projected defense employment losses are shown in Table 5-1. As Table 5-1 indicates, New York State could lose an additional 45,000 to 60,000 defense jobs between fiscal 1993 and fiscal 1997 depending on the severity of future defense cuts.

Table 3
Projected Defense Industry Employment Losses,
Fiscal 1993-97, Selected States
(Thousands of Jobs)

State	Low Estimate	High Estimate
California	124	171
Texas	50	66
NEW YORK	45	60
Virginia	40	53
Massachusetts	32	44
Ohio	32	43
Pennsylvania	30	40
Florida	28	38
Connecticut	26	34
New Jersey	23	31
U.S. Total	731	983

Source: Federal Reserve Bank of New York, Quarterly Review, Autumn, 1992, Table 4, P. 65

The current defense build-down has been particularly traumatic for Long Island because it entailed massive cuts in the procurement of weapons produced by private-sector defense contractors. Long Island accounts for a preponderance of New York State's private-sector defense industry jobs. The Defense Department has

identified several industries in which a significant proportion of total output consists of defense production. These industries include communications equipment, electronic components, aircraft and parts, search and navigation equipment and measuring and controlling devices, among others. In 1992, Long Island contained an estimated 46,000 jobs in these industries. Between 1986, when defense employment on Long Island peaked at approximately 80,500 jobs, and 1992, Long Island lost more than 34,000 defense jobs, a loss of 43%. As a result, the Long Island economy has become significantly less dependent on defense-related employment.

The decline in defense jobs mirrored the decline in defense prime contracts to Long Island firms. Defense awards to Long Island firms exceeded $5 billion during fiscal years 1985 through 1987. They declined to only 2.9 billion by fiscal 1992. In fiscal 1992, the Navy accounted for two-thirds of all Defense Department prime contract awards to Long Island firms. This reflects the Grumman Corporation's long-standing role as a major supplier of Navy aircraft. It also reflects the fact that Grumman alone accounted for 72% of the dollar value of defense prime contract awards to firms on Long Island in fiscal 1992. This finding underscores the extent to which the fortunes of Long Island's defense sector depend on the fortunes of a single company, the Grumman Corporation.

Long Island's Competitive Position in Manufacturing. Long Island manufacturing industries face national and global competition. Given Long Island's high cost structure, superior

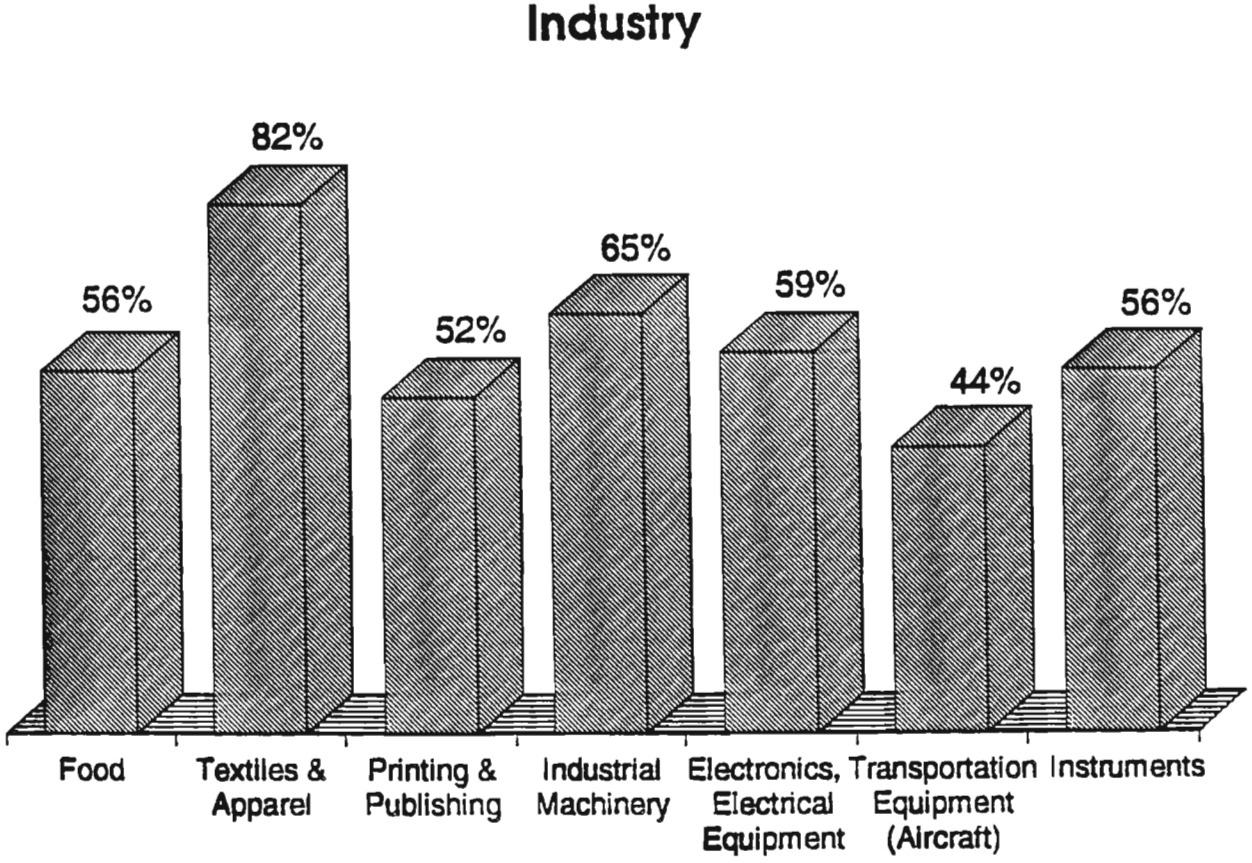
worker productivity is one of the few ways in which Long Island manufacturers can remain competitive. Productivity measures include value added per employee, value added per production worker manhour, and value added per dollar of wages. These measures were computed for the entire manufacturing workforce, which includes professional, managerial, and technical workers, and specifically for blue-collar production workers. The size of the blue-collar workforce on Long Island varies significantly by industry. In transportation equipment, which is synonymous with aircraft and parts on Long Island, factory production workers accounted for only 44% of total employment. By contrast, production workers accounted for more than 82% of the total workforce in apparel and textiles. See Graph 8.

Conventional wisdom suggests that high manufacturing earnings and high manufacturing productivity go hand-in-hand and vice-versa. The explanation is that high productivity boosts profits and enables management to raise wages. The productivity measures indicated that this generalization applies to some, but not all, Long Island manufacturing industries.

According to the most recent Census of Manufactures, above-average productivity was linked to above-average earnings in each of the following industries: bakery products, petroleum and coal products, metalworking machinery, and transportation equipment (aircraft and parts). In transportation equipment, for example, average annual salaries, $38,500, were 45% above average manufacturing salaries but value added per employee, $88,500, was

Graph 8

The Ratio of Factory Workers-to-Total Workers in key Long Island Manufacturing Industries, 1987



ırce: Long Island Regional Planning Board, Based on Data from the 1987 Census of Manufactures

52% above mean value added for manufacturing. Conversely, significantly below-average productivity was associated with significantly below-average wages in textiles, apparel, lumber and wood products, leather and leather products, electric lighting and wiring equipment, and miscellaneous manufacturing. The average annual salary in textiles, $16,500, was almost 38% below average manufacturing salaries on Long Island and value added per employee, $34,000, was 42% below the bi-county average for manufacturing.

Nevertheless, there were enough exceptions to this relationship to suggest that other factors are at work to blur the relationship between productivity and wages. For example, significantly above-average productivity and below-average wages characterized both the periodicals industry and the soaps, detergents, and cosmetics industry. In instruments, above-average wages were associated with below-average productivity. In periodicals, the average annual wage, $24,500, was 8% below the mean wage for manufacturing. Nevertheless, value added per employee, $136,000, was more than double the bi-county average for manufacturing.

These anomalies might reflect differences in skill levels between industries, the capital intensity of each industry, the degree of unionization within each industry, the uniqueness of the product produced, and the quality of management. The extent to which given industries sell to defense markets may also have a bearing on the outcome. It is widely believed that productivity tends to suffer in industries that are dominated by defense

production because such industries are less subject to the competitive pressures and discipline of the market place. It should also be noted that the analysis does not distinguish between work that is done during the developmental phase of a project and work done in the production phase. Differences in value added in each phase are probably more closely related to differences in the nature of the work rather than to differences in worker productivity.

Absolute measures of productivity tell only part of the story. Long Island's competitive position in manufacturing depends in part on the productivity of its manufacturing workforce vis-a-vis worker productivity in competing areas and regions. To assess Long Island's relative position, the productivity of Long Island's manufacturing workforce was compared with that of selected states and metropolitan areas on an industry-by-industry basis. The findings show that Long Island manufacturers are highly competitive vis-a-vis their counterparts in other regions in certain key industries but that they are equally non-competitive in other key industries.

The tradeoff between wage costs and worker productivity was highly favorable in the aircraft and parts industry. For purposes of analysis, Long Island's performance in this industry was compared with that of firms in California, Florida, Texas, Arizona, and Indiana and with firms in the Los Angeles, San Diego and Miami-Ft. Lauderdale metropolitan areas. Each of these areas contains a substantial number of aircraft jobs. In 1987, average

Long Island salaries in this industry, $39,000, were 15% above mean salaries in these states and 23% above mean salaries in these metropolitan areas. However, value added per employee on Long Island in aircraft and parts, $90,000, was 58% above mean value added for the states studied and 41% above mean value added for the metropolitan areas studied. In this industry Long Island's high salaries were justified by superior worker productivity. See Graph 9.

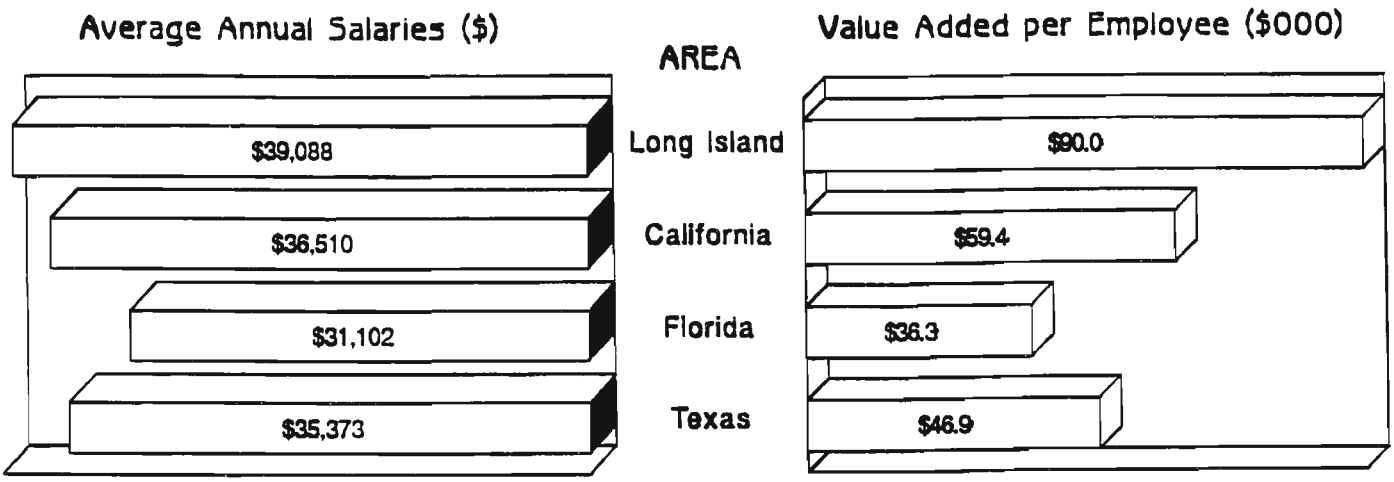
Printing and publishing also compared favorably in terms of worker productivity. In this industry, Long Island's salary and productivity performance was compared with that of Florida, Indiana, New Jersey, Michigan, California, Massachusetts, and Texas. The Miami, Indianapolis, Bergen-Passaic, Detroit, Los Angeles, Boston, and Houston metropolitan areas were also studied. Average Long Island salaries in printing and publishing, $24,500, were 12% above mean salaries in these states and 4% above mean salaries in these metropolitan areas. However, value added per employee in printing and publishing was $60,500 on Long Island, 10% above the mean for the sample states and 5% above the mean for the sample metropolitan areas.

It is noteworthy that the clear leader in terms of worker productivity within the printing and publishing industry was New York County (Manhattan). Value added per employee in New York County, $122,000, was double that of Long Island. Average annual salaries in New York County, $31,500, were only about 29% higher than on Long Island. However, when compared with nearby New

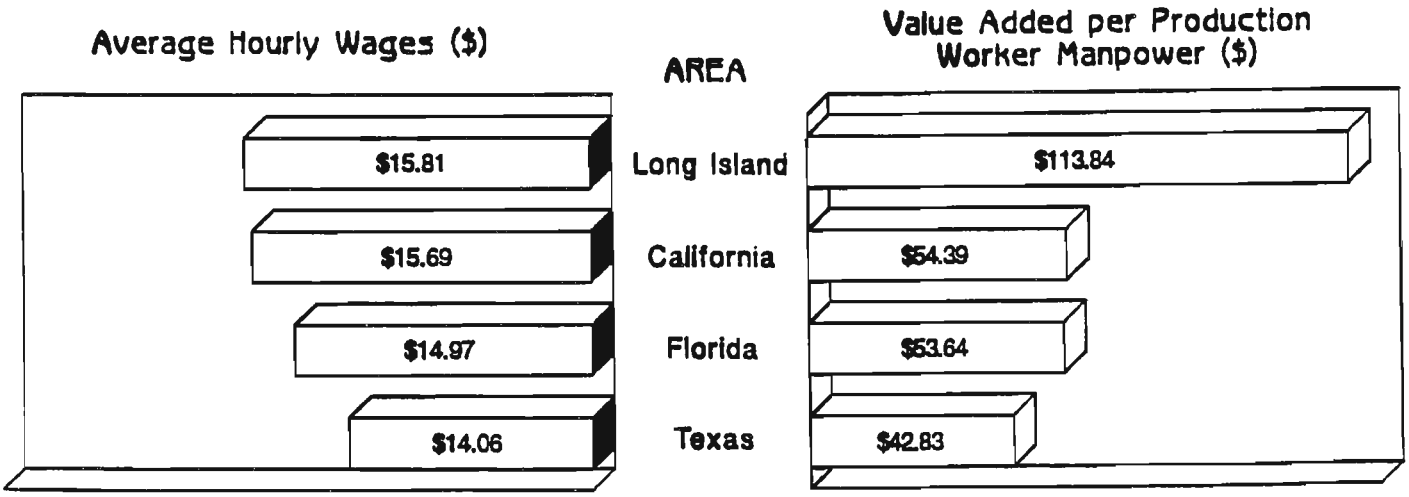
Graph 9

Wages and Salaries vs. Worker Productivity, Aircraft and Parts, 1987
Long Island vs. Selected Areas

1. All Workers



2. Factory Production Workers

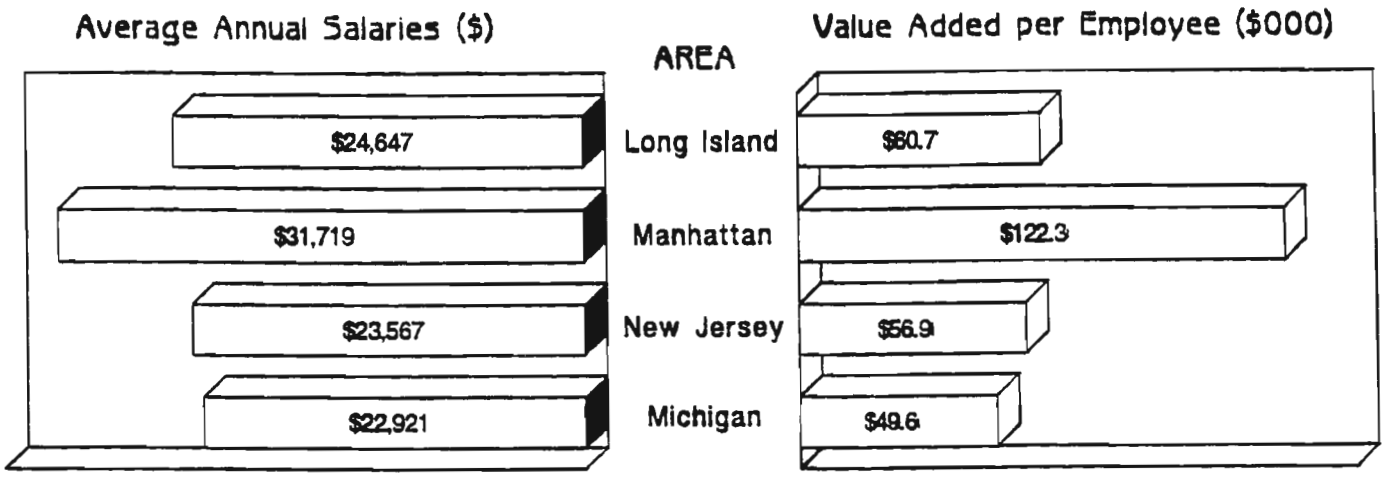


Source: Long Island Regional Planning Board Based on Data From the 1987 Census of Manufactures

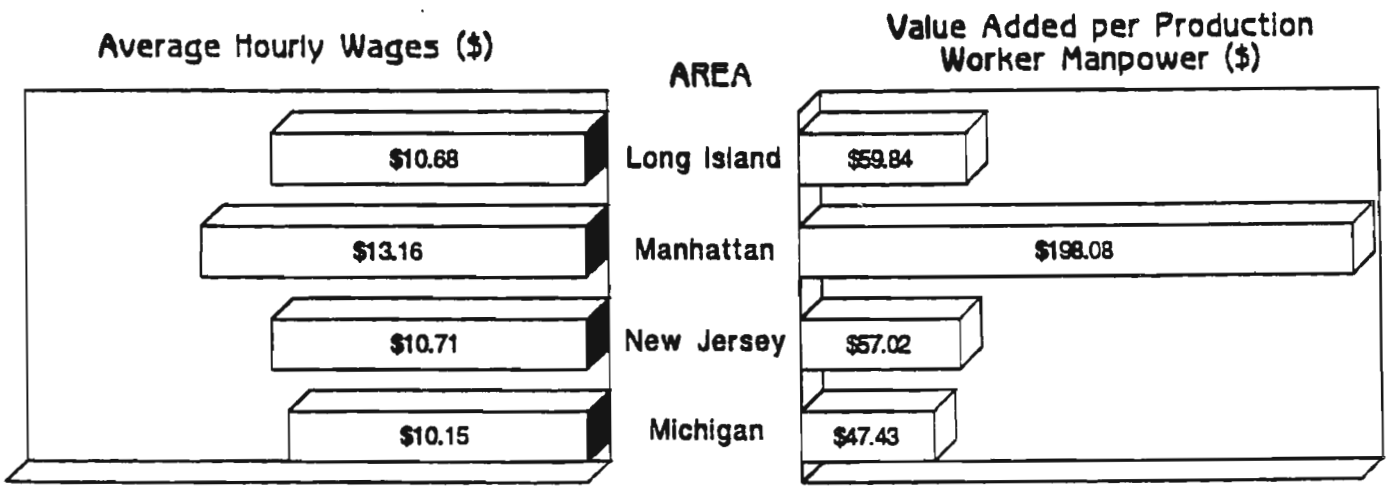
Graph 10

Wages and Salaries vs. Worker Productivity, Printing and Publishing, 1987
Long Island vs. Selected Areas

1. All Workers



2. Factory Production Workers



Source: Long Island Regional Planning Board Based on Data From the 1987 Census of Manufactures

Jersey, Long Island production workers enjoyed slightly lower salaries and produced 5% more. When compared with their counterparts in Michigan, Long Island production workers earned 5% more but produced 26% more. See Graph 10.

In the periodicals segment of the industry, Long Island salaries were generally below those of the other areas studied and worker productivity was generally higher. Long Island's average annual salary in this industry, $24,500, was 12% below the mean for the metropolitan areas studied. Yet, value added per employee on Long Island, $136,000, was 28% above the mean for these areas. When compared with nearby New Jersey, Long Island workers in this industry earned 5% less but produced 62% more, as demonstrated by value added per employee.

Long Island was also a relatively competitive location for manufacturers of fabricated structural metal products. Average annual Long Island salaries in this industry, $25,500, were 11% above the mean for the states studied and 5% above the mean for the metropolitan areas studied. However, the level of value added per employee on Long Island, $52,500, generally justified these salaries.

Long Island has been considered at a disadvantage relative to the sunbelt states because manufacturing salaries in the sunbelt are generally thought to be lower. It is true that in the fabricated structural metal products industry, hourly factory wages on Long Island were 25% above those in North Carolina. However, value added per production worker manhour on Long Island was 30%

above that of North Carolina.

Long Island manufacturers of metalworking machinery and equipment also performed well in terms of worker productivity. Average annual salaries on Long Island, $27,000, were 31% above those in Florida, 5% above those in New Jersey, 2% below those in Connecticut, 4% above those in California, and 6% above those in Massachusetts. However, value added per employee on Long Island, $58,500, was 56% above that of Florida, 28% above that of New Jersey, 26% above that of Connecticut, 30% above that of California, and 20% above that of Massachusetts.

The analysis also underscored Long Island's productivity weaknesses in two key industries -- instruments and electronics. This weakness is significant because these are two of the industries upon which Long Island hopes to build its future high-technology manufacturing base. In instruments, Long Island's average annual salary, $30,500, was 3% above mean salaries in the competing metropolitan areas and states studied. However, value added per employee on Long Island, $54,000, was 21% below mean value added in the sample states and 46% below mean value added in the sample metropolitan areas. When compared with Florida, Long Island salaries were 10% higher and Long Island productivity was 20% lower. When compared with Pennsylvania, Long Island salaries were 15% higher and Long Island productivity was 13% lower. When compared with New Hampshire, Long Island salaries were 5% higher and Long Island productivity was 37% lower.

The same pattern applied to factory production workers.

Factory wages averaged $13 hourly on Long Island, about 6% higher than in the sample metropolitan areas and states. However, value added per factory manhour on Long Island, $50, was about 29% below the mean for the sample metropolitan areas and states. Long Island factory earnings for this industry were 54% above those in Florida, 3% above those in California, 34% above those in Illinois, 31% above those in Connecticut and 30% above those in Texas. Yet, value added per production worker manhour on Long Island, $50, was 26% below that of Florida, 33% below that of California, 20% below that of Illinois, 29% below that of Connecticut, and 19% below that of Texas.

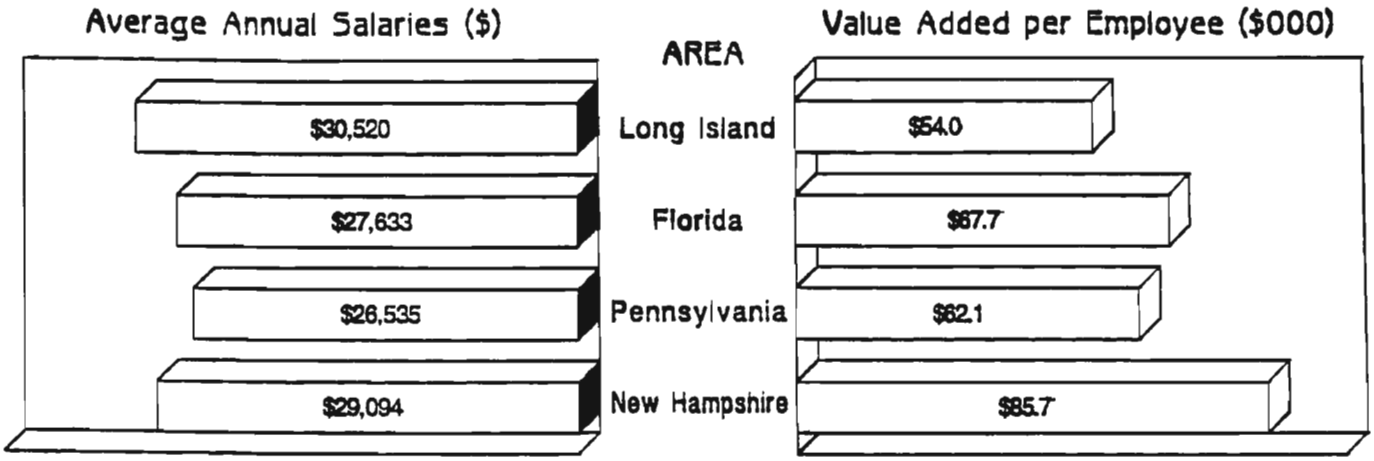
The various subindustries within instruments were also characterized by adverse productivity results. In search, detection, and navigation instruments, Long Island salaries were similar to those of the other metropolitan areas and states studied. However, Long Island value added per employee was about 8% below mean value added for these metropolitan areas and states. In measuring and controlling devices, Long Island salaries were also in line with those in the other areas studied but value added per employee was about 29% lower. In surgical, medical, and dental instruments, Long Island salaries were 15% below the mean for the sample metropolitan areas studied but value added per employee was 44% below the mean for these areas. See Graph 11.

Long Island's productivity weakness in electronics was equally apparent. Average Long Island salaries in electronics were 15% below those of firms in California, 15% below those in Texas,

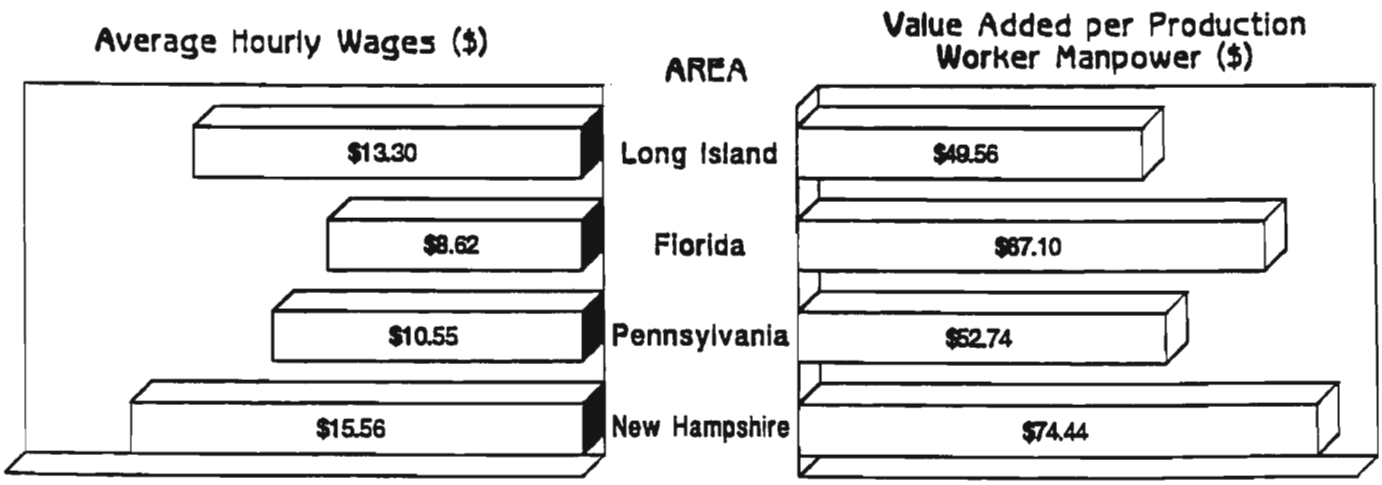
Graph 11

Wages and Salaries vs. Worker Productivity, Instruments, 1987
Long Island vs. Selected Areas

1. All Workers



2. Factory Production Workers



Source: Long Island Regional Planning Board Based on Data From the 1987 Census of Manufactures

almost identical to those in New Jersey, and 5% above those in Georgia. However, value added per employee on Long Island was 22% below comparable value added in California, 28% below that in Texas, 9% below that in New Jersey, and 40% below that in Georgia.

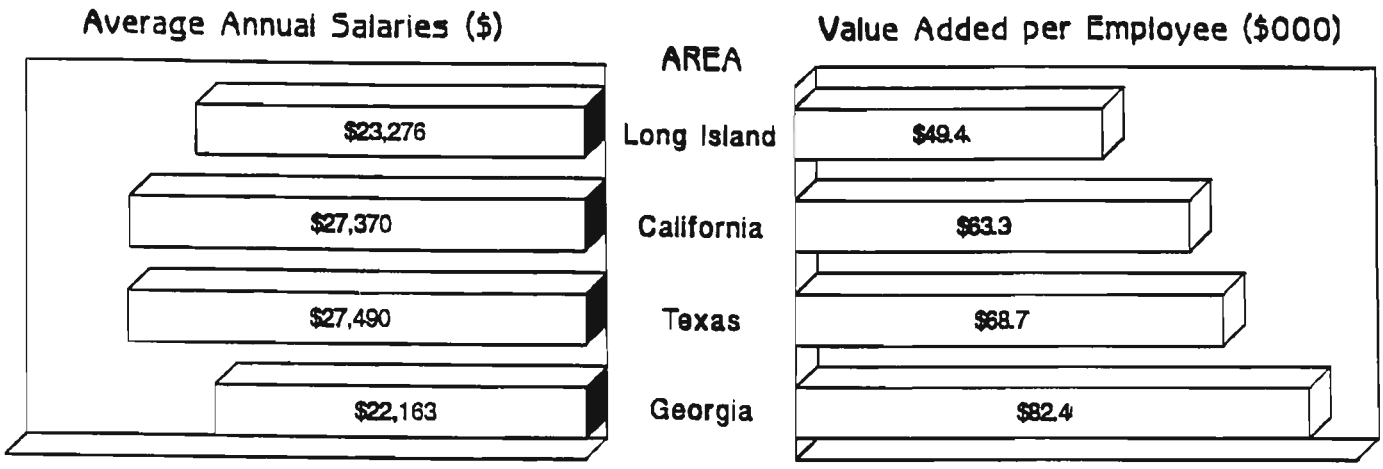
The same pattern characterized factory production workers alone. Average hourly factory earnings in this industry were $9 on Long Island, approximately 12% below mean hourly earnings in the states and metropolitan areas studied. However, value added per production worker on Long Island, $42, was 23% below mean value added for the sample states and 15% below mean value added for the sample metropolitan areas. Long Island factory wages in this industry were 12% below those of California, 11% below those of Texas, virtually identical to those in Florida, 8% below those of Maryland and 12% below those of Virginia. However, Long Island's value added per production worker manhour in this industry was 27% below that of California, 36% below that of Texas, 30% below that of Florida, 18% below that of Maryland, and 22% below that of Virginia.

These imbalances also characterized the major subindustries within electronics. In electrical industrial apparatus, average annual Long Island wages, $22,000, were about 8% below mean wages in the states and metropolitan areas studied. However, value added per employee on Long Island was about 30% below comparable value added ratios in these areas. In electric lighting and wiring equipment, average Long Island salaries were about 9% below the mean for the sample areas with which Long Island was compared but

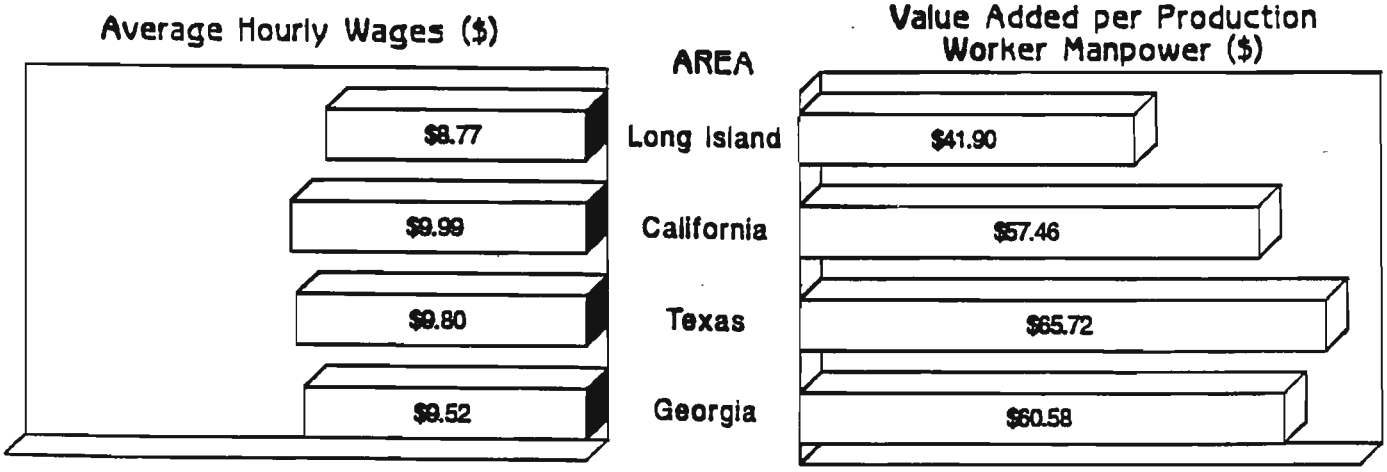
Graph 72

Wages and Salaries vs. Worker Productivity, Electronic Equipment, 1987
Long Island vs. Selected Areas

1. All Workers



2. Factory Production Workers



Source: Long Island Regional Planning Board Based on Data From the 1987 Census of Manufactures

value added was about 35% below comparable means for these areas. In communications equipment, average Long Island salaries were about 15% below comparable mean salaries in the sample states and metropolitan areas and value added per employee was about 28% lower. See Graph 12.

Productivity weaknesses in the manufacture of instruments and electronic equipment on Long Island may reflect the fact that these industries are dominated by defense production. Industries in which defense output accounts for a preponderance of total output tend to be insulated from the competitive pressures of the market place. This can adversely affect productivity.

The Tourism Industry

Tourism on Long Island is a $2.3 billion industry. Long Island's travel-related industries, which include travel agents and tour operators, restaurants, eating and drinking places, hotels, motels, and tourist courts, and amusement and recreational services, employed almost 92,000 persons in 1991 -- a larger work force than the electronics, instruments, and aircraft industries combined. Approximately 24 million visitors come to Long Island annually. To accommodate these visitors Long Island has developed a large tourist-related infrastructure. It includes 84 museums, 28 legitimate theaters, 300 hotels and motels with a total of 14,000 rooms, 113 golf courses, 95 tennis clubs, 86 major parks

encompassing 55,000 acres, and 429 yacht clubs and marinas.

Nevertheless, tourism and business travel are not automatic growth industries. They must be carefully nurtured in order to produce acceptable growth rates. The growth of travel-related employment on Long Island plateaued the early 1990s just as a large number of new hotel rooms came on line. If tourism growth is to resume and accelerate, Long Island must be responsive to the changing travel market. It must position itself as a multi-season tourist destination and as a full-service location for business meetings and conventions. The travel industry must also market its products and services more broadly to potential domestic and foreign visitors.

There were an estimated 92,000 travel-related jobs on Long Island in 1991. These jobs generated total payrolls in excess of $1.3 billion. Although the travel-related industries are a major source of jobs, many are part-time or seasonal jobs that pay relatively low salaries. Of the 92,000 jobs identified as travel-related in 1991, only 7,000 jobs or about 8% of the total were in industries that paid average annual salaries of $25,000 or more. Some 57,000 jobs, 59% of the total, were in industries with average annual salaries of less than $10,000.

Occupational information was available for ten travel-related industries which collectively accounted for 92% of all travel-related jobs on Long Island. Approximately 65% of the workers in these industries were service workers, 9% were managers, 8% were salespersons, and 13% were blue-collar workers. The

predominance of service workers such as food and beverage preparation workers, janitors, cleaners, maids, and housekeepers explains the relatively low average annual salaries associated with many of the travel-related industries.

However, some of Long Island's travel-related industries are characterized by unusually high multipliers. These industries have extensive and complex linkages with many other Long Island industries so that any increase in travel-related spending is multiplied considerably through successive rounds of respending to stimulate the economy. The highest multipliers are associated with commercial sports. For example, a $100 increase in output (sales) within commercial sports would raise total Long Island output and earnings by $216 and $88 respectively. This includes the original $100 increase in output. A $1 million output increase would generate approximately 47 new bi-county jobs. There were also relatively high multipliers for theatrical producers, bands and entertainers, membership sports and recreation clubs, and construction of new hotels, motels, amusement and recreation buildings. It is noteworthy that the multipliers for these industries exceeded those for Long Island's manufacturing industries except for aircraft and parts. They also exceeded the multipliers for Long Island's service-producing industries except for insurance and health services. This suggests that the travel-related industries deserve the support of Long Island's economic development agencies because such support is likely to generate substantial economic dividends through the multiplier process.

The hospitality industry on Long Island has changed dramatically during the past decade. During the late 1980s, Long Island's small-scale east end hotels geared to the leisure traveler were supplemented by major full-service hotels, generally part of national hotel chains, that serve the business traveler as well. The Long Island economy slipped into its most severe post-war economic recession just as many of these new hotel rooms came on line. Businesses reduced their travel and entertainment budgets in response to the more austere economic climate. At the same time, the leisure travel market plateaued following a decade of strong growth. Long Island's leisure travel market was greatly affected by the deseasonalization of pleasure travel. Leisure travelers now take winter as well as summer vacations, which has tended to reduce the duration and relative significance of summer vacation travel. This worked to Long Island's disadvantage because Long Island has not been a strong competitor for winter travel.

If Long Island is to increase its share of the travel market, it must understand what motivates people to travel and what they expect in terms of the travel experience. The motives behind business travel are self-explanatory. During the 1990s, tighter corporate travel budgets will motivate business travelers to seek greater value for their money. They will also choose accommodations and locations that offer ancillary business services such as in-room computer hookups and access to fax machines and secretarial services.

The leisure travel market is more complex. Most leisure

travelers pursue several goals simultaneously. They want to participate in a variety of sports, cultural pursuits, and recreational activities and Long Island must satisfy as many of these goals as possible.

The leisure travel market has undergone radical changes during the past decade. The traditional two-week family vacation, generally in the summer months, appears to be a thing of the past. The norm is now up to six, 3-day and 4-day vacations annually. Americans now favor several short weekend pleasure trips over one longer trip. This has led to the deseasonalization of vacation travel. There has also been a marked decline in the presence of children as part of the travel party.

The changing travel market reflects general societal changes. Increases in the number of dual income households have generated greater time and work pressures. This, in turn, has motivated Americans to take more frequent breaks in their routine. However, they can no longer set aside large blocks of time so that weekends have become the most convenient time for a quick getaway. Future promotional efforts oriented to the leisure traveler must take these changes into account.

Various groups currently promote tourism and business travel on Long Island and there have been notable successes. The Long Island Convention and Visitors Bureau is working with the New York State Department of Economic Development to feature the I Love New York Fall Festival on Long Island in the Autumn of 1994. The seven week festival will run from September 17 through October 31, 1994.

Featured Long Island events will be included in the I Love New York Travel Guide which is distributed nationwide. Travel Expo '94, a trade show for tour operators, is scheduled to come to Long Island in March, 1994. The trade show will take place at the Huntington Town House and several Long Island hotels and restaurants will participate in the event.

It has already been demonstrated that commercial sports activities generate unusually high employment multipliers. Two recently-appointed sports commissions, the Nassau Sports Commission and the Long Island Sports Commission, are attempting to attract amateur and professional sports activities to Long Island. The Long Island Sports Commission has succeeded in attracting the Goodwill Games to Long Island in 1998. The Goodwill Games attract athletes from more than sixty countries. They feature events such as archery, cycling, figure skating, ice hockey, judo, speed skating, swimming, diving, water polo, wrestling, and yachting.

Long Island's Educational Institutions

Long Island possesses a diversified higher educational structure that includes trade and technical schools, two-year colleges, four year colleges offering both undergraduate and graduate education, and professional schools. Long Island is a high-cost area. This puts it at a competitive disadvantage relative to areas with lower living costs and production costs.

Long Island's principal competitive advantage consists of the skills of its labor force. Long Island's colleges and vocational schools play a vital role in educating the labor force and equipping them with the skills needed by current and future employers.

Trade and Technical Schools. As of the 1992-93 academic year, Long Island contained fourteen accredited technical and trade schools. They collectively enrolled 11,500 students and employed approximately 380 faculty members. The training they offer ranges from real estate appraisal and brokerage to commercial driver training, court reporting, restaurant management, drafting, computer programming and operations, electronics, data entry and various paraprofessional medical technologies. Many of these courses can be completed in six months or less. Others require one or two years. If Long Island is to expand its high-technology employment base, it needs not only scientists and engineers, but also appropriately trained technical support personnel.

Long Island's technical and trade schools, their approximate 1992-93 enrollment and faculty size are listed in Table 4.

Table 4
Long Island Technical and Trade Schools
1992-93 Enrollment and Faculty Size

School	1992-93 Enrollment	Faculty Size	Typical Courses Offered
American Real Estate School	3,000	25	Real Estate Sales, Appraisal, Mortgage Brokerage
The Berkeley School	170	10	Word Processing, Office Administration, Fashion
Commercial Driver Training	1,651	35	Tractor Trailer, Truck and Bus Drivers
Cornell University/NYSSILR Ext.	115	24	Human Resources, Labor Relations
Court Reporting Institute	300	14	Court Reporting
Culinary Arts Center	123	16	Chef, Food Director, Restaurant Manager
Gloria K. School	622	15	Word Processing, Desktop Publishing, Bookkeeping
Grumman Data Systems Institute	850	40	Computer Operations, Electronics, Court Reporting
National Center for Disability Svc.	1,200	53	Computers, Word Processing, Deaf Studies
Island Drafting and Technical Inst.	575	25	Drafting, Electronics, Computers, Computer Software
Long Island Board of Retailers	1,002	30	Real Estate Licensure and Appraisal
Long Island Business Institute	370	25	Court Reporting, Secretarial, Word Processing
Stenotopia	550	30	Court Reporting, Machine Shorthand
Suburban Technical School	1,000	40	Electronic, Data Entry, Medical Assistant
Total	11,528	382	

Source: Long Island Business News, June 21, 1993

Two-Year Colleges. Additional technical training is available at Long Island's two-year colleges. These include Briarcliff Business College, Katherine Gibbs School, Nassau and Suffolk Community Colleges, and Touro College School of Health Sciences. During the 1992-93 academic year, these institutions collectively enrolled almost 47,000 students and employed upwards of 3,000 faculty members.

Four-Year Colleges and Universities. Long Island's four-year colleges and universities enrolled almost 83,000 graduate and undergraduate students and collectively employed almost 7,000 faculty members during the 1992-93 academic year. The public sector four-year institutions included SUNY at Stony Brook, SUNY at Old Westbury, SUNY College of Technology at Farmingdale, SUNY Empire State College, and the U.S. Merchant Marine Academy. The private four-year institutions include Adelphi University, Hofstra

University, Long Island University, Dowling College, and the New York Institute of Technology. Their graduate and undergraduate enrollment and faculty, as of the 1992-93 academic year, is shown below:

Table 5
Long Island's Four-Year Colleges and Universities
1992-93 Enrollment and Faculty

School	1992-93 Enrollment		Faculty Size	
	Undergraduate	Graduate	Full Time	Part Time
Adelphi University	4,153	4,108	271	400
Dowling College	3,541	1,627	94	296
Five Towns College	725	0	36	28
Hofstra University	8,170	3,002	447	510
L.I. Univ.-Brentwood	250	574	41	100
L.I. Univ.-CW Post Campus	3,831	3,421	303	300
L.I. Univ.-Southampton	1,294	114	69	48
Molloy College	3,619	100	111	125
N.Y. Inst. of Technology	7,301	2,920	274	424
Polytechnic University	435	356	53	51
St. Joseph's College	1,933	0	80	215
SUNY at Stony Brook	11,000	5,571	1,284	307
SUNY at Old Westbury	4,111	0	139	116
SUNY College/Farmingdale	8,800	0	265	220
SUNY/Empire State College	645	0	18	18
U.S. Merch. Marine Acad.	935	0	83	5
Webb Inst. of Naval Arch.	77	0	10	3
Total	60,820	21,793	3,578	3,226

Source: Long Island Business News, June 21, 1993

Professional Schools. Long Island's professional schools train physicians, dentists and lawyers. During the 1992-93 academic year, Long Island's five professional schools collectively enrolled approximately 3,000 students and employed 775 faculty members. These schools and their 1992-93 enrollment are as follows:

follows:

Table 6
Long Island Professional Schools
1992-93 Enrollment

School	No. of Students
Hofstra University School of Law	810
New York College of Osteopathic Medicine/NYIT	660
SUNY, Stony Brook School of Dental Medicine	125
SUNY, Stony Brook School of Medicine	540
Touro College Law Center	900
Total	3,035

Source: Long Island Business News, June 21, 1993

Long Island's educational institutions contribute materially to the Long Island economy not only in terms of wages paid but also in terms of the goods and services they purchase. In the first quarter of 1993, Long Island's private elementary and secondary schools and colleges employed more than 19,000 persons. They generated annual payrolls of $404 million. The private colleges alone generated annual payrolls of $200 million. Long Island's public elementary and secondary schools and colleges employed almost 83,000 persons. They generated annual payrolls of almost $3 billion in 1993. The public colleges alone generated annual payrolls of $425 million. Long Island's educational institutions account for approximately 15% of total payrolls on Long Island. They are a significant segment of the Long Island economy.

The Scope of Poverty on Long Island

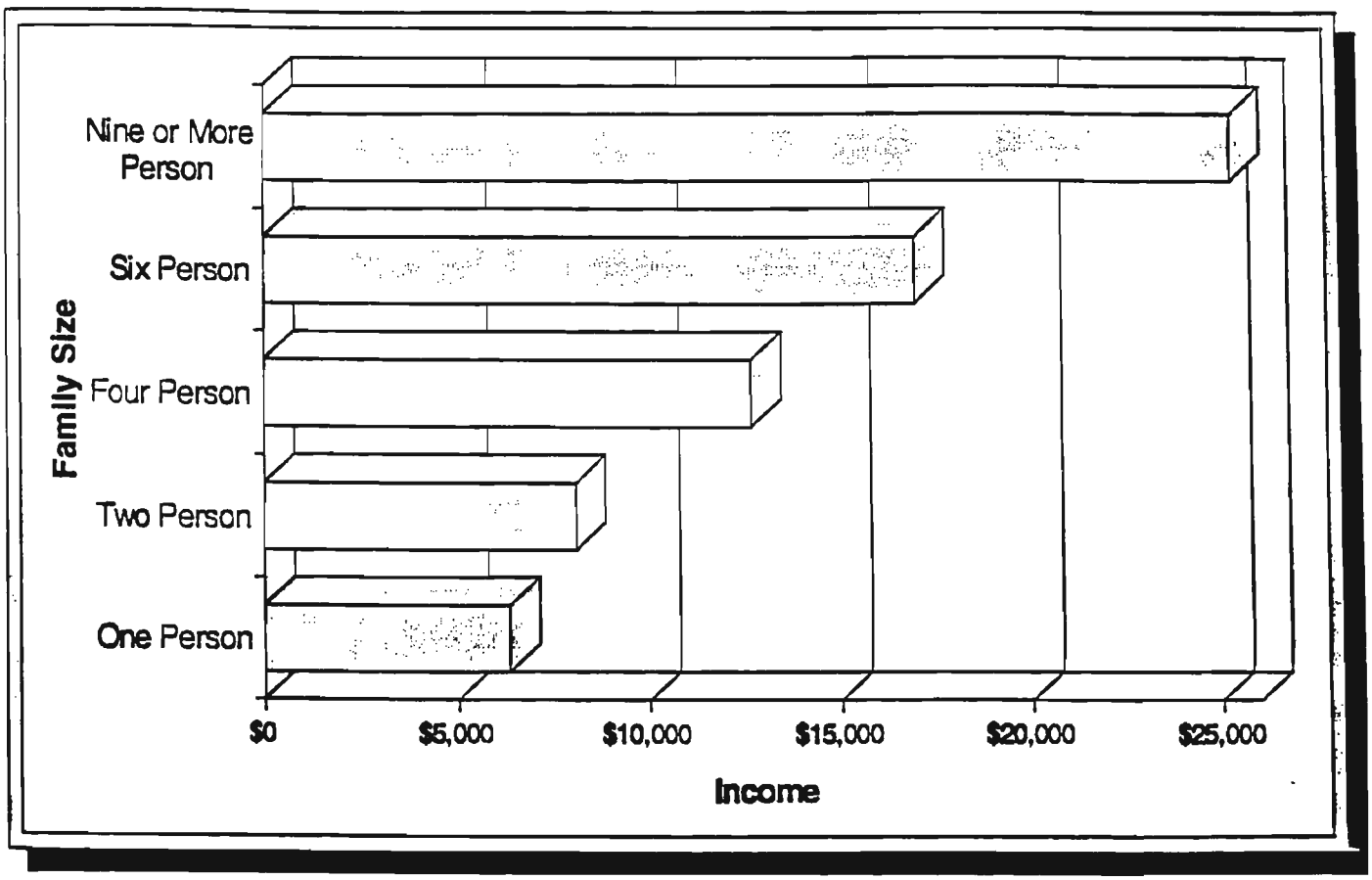
Poverty on Long Island is deeply entrenched and more prevalent

than census statistics indicate. The U.S. Census Bureau only computes poverty thresholds for the nation as a whole. In 1989, for example, a one-person household with an annual income of less than $6,314 was considered to be below the poverty level. A four-person household with an annual income of less than $12,675 was also described as "living in poverty". See Graph 13.

The use of these guidelines is of limited value in identifying the scope of poverty on Long Island because the bi-county area is characterized by unusually high incomes. Nassau's 1989 median family income was $60,619; Suffolk's was $53,247. The use of national poverty guidelines shows that there was a significant decline in the incidence of poverty on Long Island during the past decade. According to the 1990 Census, the number of persons with incomes below the poverty level declined from 62,000 to 47,000 in Nassau and from 82,000 to 61,000 in Suffolk during the 1979-89 period. As of 1989, only 3.7% of all Nassau residents and 4.7% of all Suffolk residents were considered to be below the poverty line. These findings are summarized in Table 7.

Graph 13

National Poverty Thresholds, by Family Size, 1989
Average Annual Income



Source: U.S. Census Bureau

Table 7
The Incidence of Poverty on Long Island
by County, City, and Town, 1979, 1989

Area	Persons Below Poverty Level			Percent Below Poverty Level	
	1979	1989	% Change	1979	1989
Glen Cove City	1,391	1,494	+7.4	5.8	6.4
Hempstead Town	38,121	28,720	-24.7	5.2	4.0
Long Beach City	4,237	2,659	-37.2	13.3	8.3
North Hempstead Town	8,786	6,999	-20.3	4.1	3.3
Oyster Bay Town	9,701	7,320	-24.5	3.2	2.5
Nassau County	62,236	47,192	-24.2	4.8	3.7
Babylon Town	13,937	10,144	-27.2	7.0	5.1
Brookhaven Town	27,006	20,681	-23.4	7.6	5.2
East Hampton Town	1,388	803	-42.1	10.0	5.0
Huntington Town	7,192	6,034	-16.1	3.7	3.2
Islip Town	20,951	14,980	-28.5	7.2	5.1
Riverhead Town	2,167	1,883	-13.1	11.0	8.4
Shelter Island Town	146	85	-41.8	7.1	3.8
Smithtown Town	4,516	2,432	-46.1	4.0	2.2
Southampton Town	3,572	3,350	-6.2	8.5	7.6
Southold Town	1,212	997	-17.7	6.4	5.1
Suffolk County	82,087	61,389	-25.2	6.6	4.7
Nassau-Suffolk	144,323	108,581	-24.8	5.6	4.2

Source: U.S. Bureau of the Census.

Anecdotal evidence suggests that the poverty statistics shown in the 1990 census mask a significant amount of economic distress on Long Island. Measuring poverty in relation to county median household incomes suggests a greater incidence of poverty than shown in the Census figures. An analysis identified ten "very low income" census tracts in Nassau and nine in Suffolk. These are tracts in which at least 35% of the households had incomes below 50% of the county median household income and in which there were

at least 800 households with these income characteristics. These census tracts included areas in the Cities of Long Beach and Glen Cove and the Villages of Hempstead, Rockville Centre and Freeport in Nassau County. They included areas in North Amityville, Bay Shore, Patchogue, Riverhead, Southold and Flanders in Suffolk. The very low income census tracts collectively contained 26,181 households.

The analysis also identified a significant number of "near poor" or "low-to-moderate" income census tracts. In these tracts, at least 40% of all households had incomes below 80% of the county median household income and, of these, at least 20% had incomes between 50% and 80% of the county median. Once again, only those tracts containing at least 800 households with these characteristics were included. As of 1989, there were twenty-one low-to-moderate income census tracts in Nassau and an additional twenty-one in Suffolk. They encompassed areas in the Villages of Manorhaven, Mineola, Valley Stream, Lynbrook, East Rockaway, Rockville Center and Sea Cliff as well as Carle Place and parts of Elmont, Franklin Square, Uniondale, Hicksville, and Bethpage in Nassau County. They included parts of Copiague, West Babylon, Central Islip, Islip, Bay Shore, Coram, Patchogue, Mastic, Shirley, Moriches, Manorville, and Greenport in Suffolk County. Collectively these census tracts contained 43,945 households.

The average household size on Long Island, as shown in the 1990 Census, was approximately 3.3. Therefore, the foregoing findings suggest that as of 1989 at least 231,000 persons resided

in households that presumably experienced some degree of economic stress. Of these, at least 86,000 persons resided in households presumed to be in relatively severe economic distress. These figures understate the actual amount of poverty on Long Island because only those census tracts containing at least 800 households with the relevant income characteristics were included. This tends to eliminate smaller but high density pockets of poverty in Inwood, New Cassel, North Amityville, Wyandanch, North Bellport, and Gordon Heights.

The "very low income" tracts were generally characterized by a higher proportion of blacks and Hispanics than the bi-county area as a whole. In 1990, Hispanics accounted for 6.3% of the Nassau-Suffolk population but for 13.0% of the population in the very low income census tracts. Persons of Hispanic origin exceeded 20% of the population in parts of Hempstead and Freeport Villages and in Glen Cove City. In 1990, Long Island's black population accounted for 7.4% of the total population but for almost 26% of the population in the very low income census tracts. Blacks accounted for more than 40% of the population in parts of Hempstead Village and North Amityville. It is noteworthy, however, that suburban poverty is not necessarily black or Hispanic poverty. For example, whites accounted for more than 90% of the population in several very low income areas including Long Beach City, Ridge, East Patchogue, Calverton/Riverhead and Southold.

The proportion of females was also generally higher in the very low income census tracts than in the bi-county area as a

whole. In parts of Hempstead, Rockville Centre, and Ridge, females accounted for 57% to 58% of the population. It is likely that such high ratios reflect the existence of a large elderly population with a significant number of widows and/or the existence of a large number of female-headed households.

Marital status and household characteristics are closely linked to the incidence of poverty. Studies have repeatedly shown that households consisting of single, widowed, separated or divorced individuals generally have lower household incomes than married couple households. Female-headed households are also associated with a greater incidence of poverty. In 1990, the very low income census tracts contained a significantly lower proportion of married couples and a significantly higher proportion of single, widowed, separated or divorced individuals as compared with the general population. Only 46% of the population in the very low income census tracts was married as compared with 58% of the bi-county population as a whole. Almost 32% of the population in the very low income census tracts was single, about 11% was widowed and 10% was separated or divorced. In portions of Hempstead Village, less than one-third of the population was married. In the Ridge census tract, a Suffolk community, almost 22% of the population was widowed as compared with a bi-county average of 7%. Widows or widowers comprised at least 15% of the population in part of Rockville Centre and Long Beach and in parts of East Patchogue, Calverton, and Riverhead. See Graph 14.

There was also a relatively high proportion of single-parent

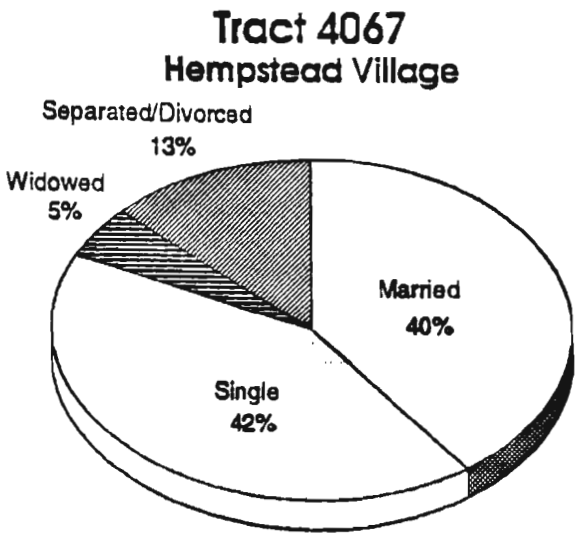
families in the very low income census tracts. In 1990, almost 84% of all Nassau-Suffolk families with children were married couple families. The comparable figure for the low income census tracts was 67%. Only 13% of all bi-county families with children were single-parent families headed by a female in 1990. However, 27% of all families in the very low income tracts were single-parent families headed by a female.

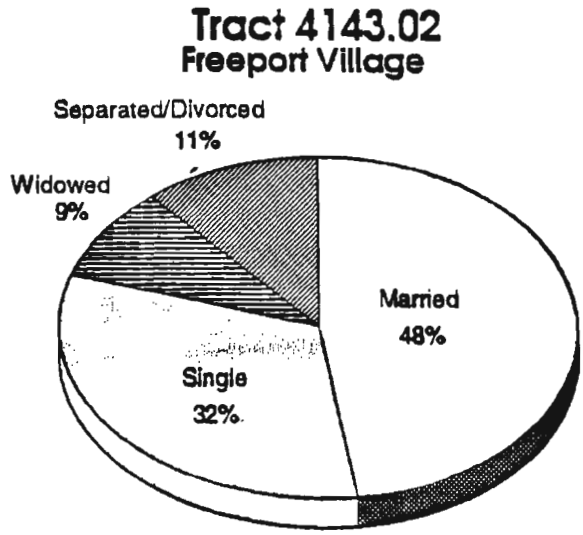
The age composition of the population in poverty areas is a critical variable. Poverty areas often contain a disproportionately large dependent population -- those under age 18 or age 65 and older. Conversely, these areas contain a disproportionately small population in the prime working ages -- ages 18 through 64. An analysis of the age composition of the population in the very low income census tracts confirms that in 1990, these areas had a relatively large elderly population. Approximately 19% of the population was age 65 and older as compared with an average of less than 13% for the bi-county area as a whole. The proportion of senior citizens was even higher in the Ridge area, where almost 54% of the population was age 65 or older. In part of Long Beach, 25% of the population was in this age category. In the Calverton-Riverhead area, the comparable ratio was 32%. In Southold, 30% of the population was age 65 and older.

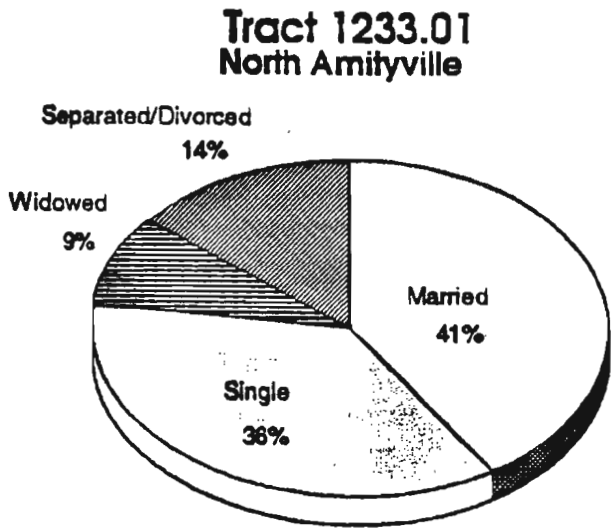
Statistics from the 1990 census showed that the very low income census tracts were characterized by a relatively low ratio of homeownership. An average of 55% of the housing units in these

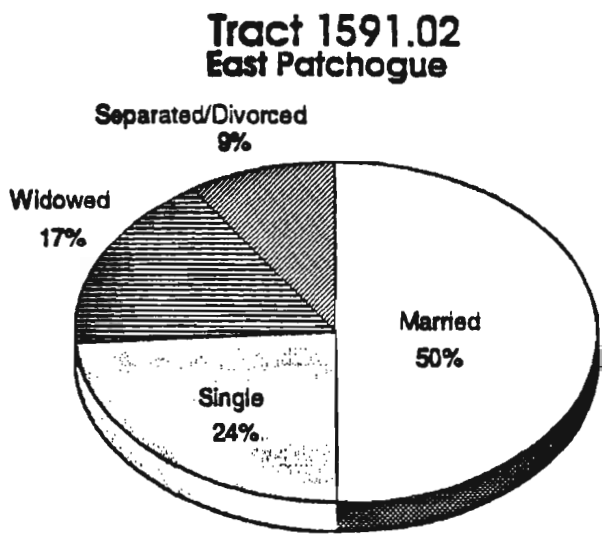
Graph 14

Marital Status of the Population in Selected Low Income Nassau-Suffolk Census Tracts, 1990





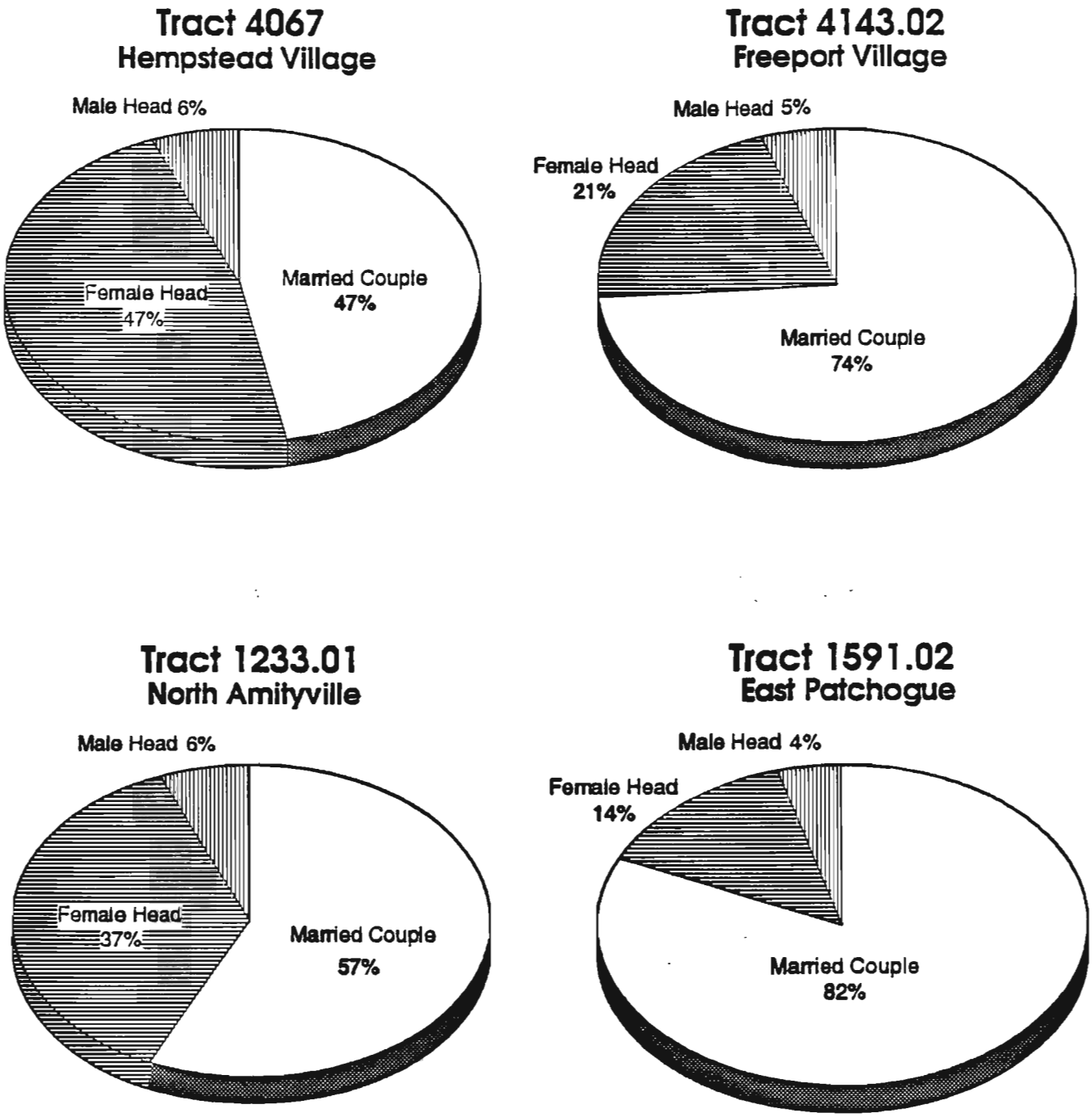




Source: Long Island Regional Planning Board, Based on 1990 Census Data

Graph 15

Household Relationships in Selected Low Income Nassau-Suffolk Census Tracts, 1990
Families with Children



Source: Long Island Regional Planning Board, Based on 1990 Census Data

census tracts were owner-occupied as compared with a mean of 80% for the bi-county area as a whole. In parts of Hempstead Village, only 13% of all housing units were owner-occupied.

A major test of the economic stress imposed by rental costs is the relationship between rents and income. Generally, rental costs exceeding 25% of monthly gross income are regarded as economically burdensome. Approximately two-thirds of the renters in the very low income census tracts paid 25% or more of their monthly gross incomes for rent. Almost 43% paid 35% or more. The situation varied considerably by community. For example, in the Patchogue tract, almost 82% of the renters paid at least 25% of their income for rent and 60% paid 35% or more.

Even homeowners in the low income areas experienced shelter burdens. However, shelter costs were less burdensome for low income homeowners than for low income renters. In the very low income census tracts, an average of 43% of the homeowners paid at least 25% of their monthly gross incomes to service their mortgages; 25% of them paid 35% or more.

The Dependent Care Needs of the Long Island Workforce

Dependent care, which is defined both as child care and elder care, is a significant workforce issue on Long Island. Given the projected slow growth of the resident labor force, Long Island must move aggressively today to provide dependent care facilities for its workforce and thereby maximize labor force participation by all Long Island residents who seek to work.

To determine the dependent care needs of the Long Island workforce, three large employment complexes were surveyed: the Hauppauge Industrial Park, the Route 110 Corridor, and the Jericho-Syosset-Woodbury area. Each area contains a significant number of jobs and each has the employment densities to support on-site or near-site consortium dependent care facilities. Consortium care, involving the participation of several area employers, is particularly applicable to Long Island, which is dominated by small and medium-sized firms. One or two small or medium-sized firms may be unable to finance a dependent care facility. However, several firms working together can generally make center-based dependent care a reality. The survey findings for the Hauppauge Industrial Park, the Route 110 Corridor, and the Jericho-Syosset-Woodbury area should be viewed as prototypes that reflect the need for dependent care throughout Long Island.

Employers in each of the three survey areas received two questionnaires: an employer questionnaire and an employee questionnaire. The employer questionnaire requested the following types of information: type of business, number of employees, willingness to support consortia dependent care, and nature of potential support. The employee questionnaire asked these questions: Do you need dependent care for children or elderly relatives? For what ages? During what days and hours? At what locations? How much are you willing to pay for such care? Do you currently have dependent care arrangements? Would you use licensed dependent care facilities if they become available?

A total of 5,102 employees in the three areas responded to the questionnaire. Of these, 1,081, or 21% of the total, needed child care. Approximately 89% of the respondents said that they would use licensed child care facilities if they became available. Care was needed for a total of 1,406 children. Of these, 29% were infants, 25% were toddlers, 22% were preschoolers between three and five years of age, and 24% were school age children over five years of age. Of the 5,102 respondents, only 140, or less than 3%, required elder care. Two-thirds of those in need of such care said they would use licensed elder care facilities if they became available. Two-thirds required care for persons age 75 and older. This population group is sometimes called the "frail elderly."

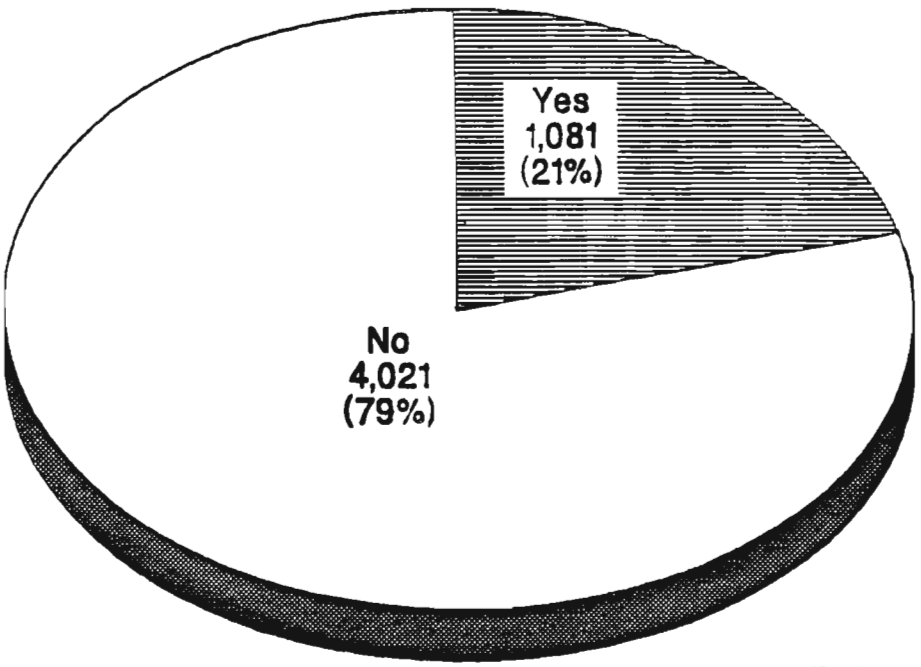
Of the 115 firms participating in the survey, almost half were service firms. One-third were small businesses employing fewer than twenty persons, 19% employed twenty to fifty persons, 10% employed 51 to 100 persons, 25% employed 101 to 500 persons, and 13% had more than 500 employees. Approximately 73% of the participating firms were willing to provide dependent care support. Approximately 30% mentioned flextime work schedules, 18% would offer flexible benefit plans, and 16% mentioned job sharing. It is noteworthy that more than 30% of participating firms indicated their willingness to provide "concrete" support, such as land, cash subsidies, contributions to community organizations that provide dependent care and financial aid to employees. See Graph 15.

The foregoing findings demonstrate a clear need for additional dependent care facilities at each of the three sites surveyed.

Graph 16

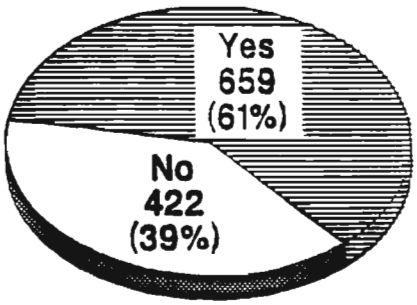
Summary of Findings, Child Care Study

Do You Need Child Care?



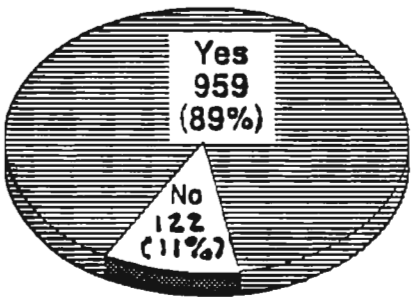
5,102 Respondents

Do You Currently Have Child Care Arrangements?



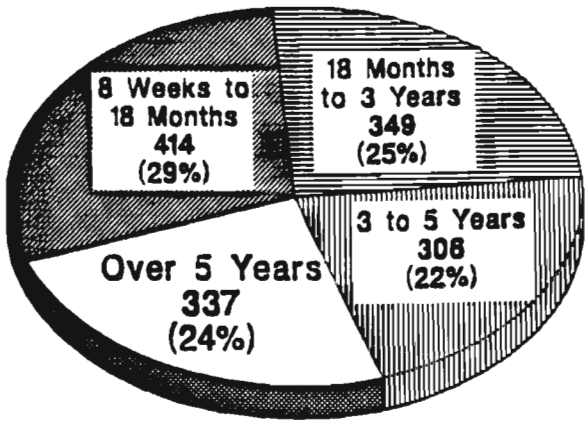
1,081 Respondents

Would You Use Licensed Child Care Facilities, if Available?



1,081 Respondents

Age of Child For Whom Care is Needed *?



1,406 Children *

*Note: Some respondents needed care for more than one child.

Source: Long Island Regional Planning Board

There is currently some center-based care adjacent to each site. For example, there are almost 900 center-based child care spaces adjacent to the Hauppauge Industrial Park, almost 1,400 such spaces adjacent to the Route 110 Corridor, and almost 300 in the Jericho-Syosset-Woodbury area. However, many of these facilities do not provide infant and toddler care. Moreover, the survey results indicated that relatively few respondents were willing to pay market rates for dependent care and many of the existing facilities charge market rates.

Energy

With the Shoreham nuclear power plant closed, Long Island faces the next two decades with serious energy handicaps. Long Island remains overly dependent upon imported oil for electricity, home heating, and gasoline. As a result, it faces recurring price spikes as well as the danger of acute shortages. Moreover, the cost of Shoreham guarantees that the Long Island Lighting Company will have the highest electricity prices in the continental U.S. for at least a decade. Natural gas, an alternative fuel, remains unavailable to a large part of Long Island's population.

Essentially, Long Island has three main energy problems: the continuing problem of overdependence upon petroleum; the imminent problem of escalating electricity rates; and the future need to restrict greenhouse gas emissions. Energy conservation has lagged since the mid-1980s, when oil prices were low and government

supports ended. LILCO's demand-side management program, while slanted toward load shifting and peak shaving, is the principal impetus to conservation on Long Island, and it is essentially limited to electricity. However, the cost of LILCO's demand-side management program feeds back to its electricity rates, raising the cost of electricity even more. Those likely to be hardest hit by these price rises are low-income consumers who already pay a higher proportion of their income for energy. Moreover, energy conservation programs for low-income people have faltered because they are not "cost-effective," and Long Island weatherization programs have been slighted in favor of those upstate where winters are colder and costs are lower.

With the greenhouse effect looming, Long Island finds itself poorly endowed with renewable resources. Photovoltaics could become important if prices continue to drop. Wind turbines can probably contribute marginally and rooftop solar water panels can help individual homeowners. Ethanol from Midwestern corn is beginning to supplement gasoline as a motor fuel here. The most substantial source of renewable energy potentially available to Long Island, however, is hydroelectricity from Niagara Falls and Quebec. Quebec has potential hydroelectric power equivalent to more than half the present generating capacity of New York State.

The following sections discuss Long Island's energy situation in greater detail:

Electricity. About one-third of Long Island's energy needs are provided by electricity. Overshadowing Long Island's future

is the continuing burden of the cost of the Shoreham nuclear plant. Under the terms of the Shoreham Settlement, $4 billion amortized over the next 40 years will be charged to LILCO's electric ratepayers. The present value of the average householder's share of that bill -- the amount he would have to put in the bank now to make the additional future payments -- is about $2,800. For the first ten years of the agreement, the impact will be applied gradually through a "rate moderation component" by which, in effect, LILCO ratepayers borrow $570 million during the first five years to repay it during the second five years at eight percent interest. The peak in future payments (which LILCO now proposes to turn into a three-year plateau) is reached in 1998. In that year, average electric rates will be about 14.5 percent higher than they would have been otherwise, which translates into an electric bill that is about $200 higher for the average residential customer and $1,875 higher for the average industrial/commercial customer.

LILCO is constructing a 150-megawatt addition to its generating capacity, to be provided by a natural-gas fueled combined cycle plant to be built by the New York Power Authority at Holtsville. In competition, the Long Island Power Authority is considering to convert parts of the Shoreham plant to a gas-fired combined cycle plant as an alternative. LILCO is also under contract to buy Quebec hydropower from the New York Power Authority beginning in 1995-96 to provide about 5 percent of its capacity.

Several of LILCO's aging power plants are be due to be phased out during the 1990s, leaving a growing gap between its power

requirements and its capacity. The gap can be filled by reducing demand through further energy conservation, by additional generating capacity on Long Island owned either by LILCO, the New York Power Authority, or independent power producers, or by additional electricity imports.

Energy conservation is the preferred solution, but there are questions as to how much energy can be saved at what cost and at what effect on electricity rates. Local cogeneration is the next best solution, but there are questions about the dependability of independent power producers. Any local electric generators are likely to be fueled by natural gas, and there is a question as to whether natural gas supplies will continue to be adequate. Quebec has huge potential for developing additional hydropower for export, but there is a question as to how it could reach Long Island.

Energy Conservation in Buildings. The principal impetus for conservation of electricity on Long Island is LILCO's demand-side management program. With an annual budget of about $30 million, LILCO has in the past few years developed programs both for shaving its peak loads and for saving energy. To be cost-effective, LILCO has concentrated on big commercial/industrial users and selective residential users. LILCO's costs and revenue losses from these programs are recovered as follows: approximately $35 million of direct program costs are built into base rates while another $7 million is recovered through the fuel adjustment clause. LILCO's 1991-92 programs will, in effect, cost its electric ratepayers another half-cent per kilowatt-hour, about $40 per year to the

average residential customer who does not conserve.

By the year 2000, LILCO's plan is expected to produce a nine percent reduction in electric energy. The New York State Energy Office would like to see a 14 percent reduction which they estimate can be achieved at double the cost. The Long Island Power Authority contractor would add to that substantial gas savings at more than half again the State Energy Office cost.

New York State also funds and manages a wide variety of energy conservation programs, paid for largely from the declining pool of petroleum overcharge restitutionary funds. In 1989, about $15.5 million was spent on Long Island. In proportion to its population, Long Island has received its bare share of State funding of these programs, principally by obtaining the lion's share of rebates for air conditioners, oil burners, and refrigerators. It has received a lesser share of some conservation programs such as those for agriculture, not-for-profit organizations, and institutions.

Low-Income Weatherization. The low-income population has been a casualty of energy conservation programs on Long Island. Low-income families typically spend about a quarter of their income for energy, compared to a ratio of 7% for all consumers. They cannot afford any contribution toward conservation measures. The low-income housing stock is often in dilapidated condition. Extensive home repairs may be necessary to protect the energy saving measures installed, and often new furnaces, boilers, or roofs are needed. Moreover, the energy-using behavior of low-income people is typically very wasteful. Considering the cost, it is difficult to

justify low-income conservation measures on the basis of cost-effectiveness.

Under a recent Public Service Commission order, a three-year pilot program for low-income people is being implemented by the State's utilities under new guidelines. It will be the first Public Service Commission program to deliver both gas and electric savings.

The program will be coordinated with the Weatherization Assistance Program administered by the New York State Department of State. This is a highly regarded program that has installed energy conservation measures in over 230,000 dwellings since its inception in 1977, by Federal law spending an average of $1,600 per house. At the rate of about 22,000 units weatherized in 1989, however, the Weatherization Assistance Program has more than a 60-year backlog. Unfortunately, the Weatherization Assistance Program has been limited on Long Island. Nassau and Suffolk Counties are allocated about 7.2 percent of the State budget, about $2.37 million in 1990, but almost a third of that went unspent, apparently because of difficulties in keeping satisfactory local administrative organizations.

Weatherization Assistance Program funds are allocated to counties in part by the number of low-income residents there. This is measured by the eligibility standards of the Home Energy Assistance Program (HEAP) of the New York State Department of Social Services, which provides direct funding for home heating fuel to low-income families. Unfortunately, the HEAP standards do

not take into account the difference in the local cost of living throughout the State. The Towns of Huntington and Islip have vainly proposed to the Weatherization Assistance Program that the eligibility standards of the U.S. Department of Housing and Urban Development (HUD) be substituted for the HEAP standards. The HUD standards do distinguish sections of the State by the local cost of living. The eligibility limits using the HUD standards are 70 percent higher than the HEAP standard for a single-person household on Long Island, and 28 percent higher for a family of three. The new Public Service Commission low-income program will unfortunately also use the HEAP standards. Thus, the energy conservation program for low-income families on Long Island is hampered by the fact that the county allocation formula does not take into account the higher cost of living on Long Island. The money that is allocated is not being fully used. Moreover, the electric energy that is not being saved is more expensive than elsewhere. At the same time, the electricity rates of low-income families include the cost of conservation by other groups of consumers, including large companies and families with central air conditioning and swimming pools.

Cogeneration and Independent Power Producers. Efficiency in electricity production is as important as its efficient use by customers. The fuel for generating electricity is most efficiently used when the heat produced also serves a useful purpose. The Public Utility Regulatory Policies Act of 1978 encourages cogeneration of steam and electricity by industry by requiring

utilities to buy the electricity produced through cogeneration at reasonable prices. The New York State Alternate Energy Act of 1980, the "six-cent law," guarantees a rate of six cents per kilowatt-hour of energy delivered to the utility.

This legislation is changing the face of the electric utility industry. Large companies like LILCO are depending increasingly on cogenerated electricity produced by independent power producers. As of May 1990, eleven cogeneration projects that will generate a total of 695 megawatts of electricity were identified as under construction or in the planning stage. Proposals for others continue to be announced.

However, LILCO considers only about 300 of this 695 megawatts potential as "secure". The public utility industry is clearly uncomfortable with depending upon small new companies with no track records. In the industry view, the growth in non-utility generation could quickly stall if there were significant changes in the cost of capital or the ability to obtain natural gas.

Independent power producers must make their own arrangements for fuel -- generally natural gas -- and then arrange with LILCO to have it delivered. With the near-term supplies of gas to Long Island less than adequate for both increased electric generation and the customary retail use, LILCO is in effect in competition with its own electric suppliers for fuel.

From the standpoint of energy efficiency, cogeneration by independent power producers is to be encouraged. However, New York State independent power producers complain that the favored tax

status of the New York Power Authority gives it unfair advantage in competitive bidding. Therefore, a more level playing field is needed.

Natural Gas Supply. Nationwide, the utility industry is turning to natural gas. Compressed natural gas (CNG) vehicles are being widely introduced, and they can help to reduce Long Island's dependence upon gasoline. Natural gas furnaces can replace those using oil. Natural gas appliances can replace those using electricity. Recently developed natural gas heat pumps for residences may reduce the need for electricity to meet summer peak cooling loads.

Whether natural gas supplies will continue to be adequate to meet this growing demand is a question. The Northeast is dependent primarily upon pipelines from the Gulf States and the Canadian West. The interstate natural gas pipeline infrastructure serving the New York State is inadequate. The expected expansion into new markets, such as cogeneration and primary fuel for power plants, cannot occur without significant capacity additions including new pipelines.

The Iroquois pipeline that brings natural gas to Long Island across Long Island Sound will increase LILCO's supplies by about one-eighth, not enough for power plant fuel as well as expansion for retail users. The capacity of Iroquois can be doubled with additional pumping stations, and at least one other gas pipeline will probably reach Long Island's south shore within a decade. Nevertheless, Long Island will remain at the tail end of the

pipelines.

An alternative to pipeline gas for Long Island is imported liquefied natural gas (LNG). It is likely that facilities for importing LNG to the Northeast from Europe or Africa will be expanded in the next two decades. Long Island could make use of its coastal location, as it now does to import oil, to establish an LNG import terminal.

The Greenhouse Effect. There is a virtual consensus in the international community of climatologists that the earth's climate is changing as a result of the greenhouse effect. Most of the industrial nations have committed themselves to a policy of stabilizing or reducing greenhouse gas emissions. These include Japan, Germany, Britain, Canada, France, Italy, Australia, the Netherlands, Belgium, Denmark, Finland, Sweden, Norway, Switzerland, Ireland, and New Zealand. It would be imprudent under the circumstances for an energy plan for the next twenty years not to include measures for greenhouse gas emission restrictions. The steps needed to reduce greenhouse gas emissions are energy conservation and efficient energy use and substitution of natural gas for other fossil fuels. The final major step is the substitution of renewable energy for fossil energy.

Energy conservation is largely worth doing anyway on economic or other environmental grounds. Additional energy conservation to reduce greenhouse emissions will become more and more expensive, however. On the other hand, most renewable energy is now too expensive, for example, for electric generation. With further

development and wider use, however, it should become progressively less expensive.

Long Island is not richly endowed with renewable resources. The renewable energy technologies that have so far proven most useful are rooftop solar water heating panels and municipal waste incinerators. Ethanol mixed with gasoline is also being introduced to Long Island. In the future, declining costs may make photovoltaic panels, wind turbines, and solar thermal electricity more competitive here. Other renewable technologies that may find applications elsewhere are not likely to be useful here. These include wet or dry geothermal energy, biomass for electricity or heat, wave or tidal power.

The major potential source of renewable energy for Long Island is hydroelectric power imported from upstate New York and Quebec. Half of the renewable energy in the U.S. today comes from hydroelectric dams. Long Island receives some of this energy from the New York Power Authority plants at Niagara Falls. This is extraordinarily cheap energy, about two cents per kilowatt-hour. The hydroelectric power that LILCO will begin receiving from Quebec in 1995-96 at about seven or eight cents per kilowatt-hour is priced to be lower than the avoided costs of New York State utilities. Future prices of Quebec hydropower are negotiable. The cost of new construction is rising, but on the other hand, Quebec's export price to the neighboring province of Ontario has been about one-third less than to New York. However, there is little enthusiasm among New York State utilities for purchasing additional

Canadian hydropower, and there are technical problems. One problem is the capacity of transmission lines connecting Long Island to the mainland.

The New York Power Authority cable makes it possible to import Quebec hydropower later in the decade. According to modeling studies performed by the New York State Energy Office, however, the connection between Long Island through ConEd to the rest of the New York Power Pool will remain the most heavily loaded interconnection in the State. Long Island is, in effect, an appendage of the New York Power Pool. This isolation has led LILCO to argue in the past that it needs a 30 percent safety margin for its installed power rather than the 18 percent that is required by the New York Power Pool. An alternative to greater generating capacity on Long Island, however, would be better integration into the regional power pools. This would seem to be possible by making better connections with the New England Power Pool, 10 to 25 miles across Long Island Sound.

A connection now exists between Northport and Norwalk, Connecticut, with a capacity of up to 286 megawatts. However, Norwalk is not strongly connected with the rest of the New England Power Pool. Within the New England Power Pool, there is a major transmission line to New Haven, which is about 20 to 25 miles from Port Jefferson and Shoreham. At Millstone there are four 345-kva transmission lines about 12 miles from Orient Point. To determine how well Long Island might link up with this system requires an analysis of the power flows that might result. Studies in Quebec

indicate that further exports of Quebec hydropower are more likely to be made to New England than New York because of the comparative costs of making the connections.

Industrial and Commercial Land Use

Retail Space. As of December 1990, the total retail square footage of Long Island shopping centers and Central Business Districts (CBDs) was 34,318,000 in Nassau County and 35,182,000 in Suffolk County. These figures represent 25.8 square feet per capita in Nassau and 25.2 square feet per capita in Suffolk. There has been considerable growth in the volume of retail space per resident on Long Island since 1970. In 1970, there were an estimated 19.1 square feet of retail space per capita in Nassau County and approximately 18.0 square feet per capita in Suffolk. Retail square footage per capita has increased 37% in the last two decades, from 18.6 square feet in 1970 to 25.5 square feet in 1990.

Office Space. The construction of large office buildings of over 15,000 square feet is a relatively recent phenomenon on Long Island. Major office space is defined as a privately owned office building, or group of offices, totalling over 15,000 square feet. As of January, 1991 there were 44 million square feet of major office space on Long Island. An additional 16 million square feet was proposed or under construction at that time.

In the 1950s and 1960s the average size of a major office building was approximately 40,000 square feet. In the 1970s the

average size of newly constructed buildings rose to 60,000 square feet and in the 1980s the average size was about 80,000 square feet. The average size of major office structures built in 1990 and 1991 exceeded 100,000 square feet. Office construction on Long Island peaked during the 1984-86 period, when more than three million square feet of office space was added to Long Island's inventory.

More than three quarters of Long Island's major office space is located within nine clusters or corridors of development. Each of these nine areas contains at least 800,000 square feet of major office space. Another 7% of the existing office space is concentrated in areas outside the major clusters or corridors of development. Table 8 indicates Long Island's major office concentrations as of 1991.

Table 8
Major Office Concentrations on Long Island, 1991

	Square Feet (000)			
	Existing	UC*	Prop**	Total
Office Clusters/Corridors				
Mitchel Field/Roosevelt Field	6,533	200	4,302	11,035
Route 110/Long Island Expressway	6,130	122	700	6,952
Oyster Bay Town/Long Island Exp.	5,709	220	832	6,761
Lake Success/ New Hyde Park	3,850	280	0	4,130
Mineola/Garden City	3,502	113	343	3,958
Hauppauge/Islandia	1,619	840	661	3,120
Ronkonkoma/Bohemia	818	205	2,069	3,092
Great Neck Peninsula	2,002	80	0	2,082
Hempstead Village	1,037	416	35	1,488
Outside Cluster/Corridors				
Rockville Center V.	573	0	0	573
Valley Stream V.	506	0	0	506
Huntington	495	0	0	495
Lynbrook V.	391	0	0	391
Port Washington	360	0	0	360
The Branch	301	0	0	301
Glen Cove City	295	172	162	629
Bethpage	30	40	3,000	3,070

* Under Construction
** Proposed

Source: Long Island Regional Planning Board

Many of the newly constructed major office buildings in Nassau County that are located in cluster/corridor areas are the result of redevelopment of industrial properties. Other areas still contain large amounts of industrial space and the offices have been developed as an adjunct to that space. Whereas some offices are located in central business districts, many of the largest, newer office buildings are located within short distances of expressway and parkway systems. These large offices provide amenities such as restaurants, retail shops and exercise facilities, previously available only in central business district locations.

Concentrations of small office buildings exist in some central business districts such as Huntington, Lynbrook and The Branch. Other concentrations have developed along major roads such as Deer Park Avenue in Deer Park.

In Nassau County an additional four million square feet of major office space is proposed for the Mitchel Field/Roosevelt Field area. An additional three million square feet of offices is proposed in Bethpage in the event that the Grumman property is redeveloped. In Suffolk one million square feet of office space is proposed for the Hauppauge/Long Island Expressway area. If all of the proposed office space comes on line, Long Island would contain over 58 million square feet of major office space.

Hotels and Motels. Nassau County now has over 4,700 hotel rooms or suites. Suffolk County contains over 6,700 year-round hotel/motel rooms, with an additional 4,200 rooms for seasonal use. Approximately 3,200 hotel rooms were built on Long Island since 1982.

Eighteen hotels and motels have been built or have expanded since 1982. All of these hotels provide year-round service. Two-thirds of the new hotels were built in western Suffolk County adjacent to the Long Island Expressway. The new hotels are relatively large with an average size of 178 units. There has been a 25% increase in the number of year-round hotel units on Long Island since 1985.

The Marriott at Mitchel Field was built in 1983 with 291

units. An additional 218 rooms were added to the Marriott at Mitchel Field in response to the strong demand for rooms at that site. The new Garden City Hotel is a deluxe four-star hotel. Another luxury hotel, the Claremont, was built in Roslyn in 1992.

Most of the new Suffolk hotels were completed since 1988. They are all easily accessible to the Long Island Expressway and relatively close to the Melville and Hauppauge areas which contain major industrial parks and large office buildings.

The spurt of hotel and motel conversions to cooperatives and condominiums has diminished in recent years. Earlier conversions generated an oversupply of converted units and some of the converted facilities went bankrupt or came close to bankruptcy. The conversion of existing seasonal units to time share units, condominiums and cooperatives has not had a marked effect on the tourism industry. One high-end congregate care facility built in Plainview for senior citizens was converted to a Marriott Residence Inn in 1989 and the Ramada Inn (Islandia) Marriott was converted to an adult home in 1993.

Industrial Land Use. At present, 27 municipalities in Nassau County and 20 in Suffolk County have some provision in their zoning ordinance for industrial development. This represents 44% of all the municipalities on Long Island.

Eleven of the villages in Suffolk County have zoning provisions that allow industrial development. In the aggregate, these villages contain only 1,130 industrially-zoned acres, or 3.4%

of the industrially zoned land in Suffolk County. Approximately 40% of the industrially zoned land located within Suffolk's incorporated villages is in the Village of Islandia. The only Long Island town without industrial zoning is the Town of Shelter Island. There are, however, some industrial uses on Shelter Island which are either nonconforming uses (predating zoning) or that have special use permits.

Currently, there are 40,000 acres of industrially zoned land on Long Island. This represents more than 5% of Long Island's total land area of 1,200 square miles. Nassau County has 7,000 acres of industrially zoned land, or almost 4% of its land area. Suffolk contains 33,000 industrially-zoned acres, or 5.7% of its land area.

Local provisions for industrial uses are extremely varied. Some of the ordinances allow only research and development activities, while others allow heavy commercial activities. Some ordinances provide for all types of industrial uses within industrial zones. These include light manufacturing, warehousing, and wholesaling.

There are also great variations in requirements for lot sizes, coverages, height and setbacks within industrial zones. Minimum lot size requirements vary from 10,000 square foot lots to 6 acre lots. Coverage maximums are between 20 and 80%. Yard setbacks vary from 10 feet to 120 feet and maximum permitted heights vary from 30 feet to 100 feet.

In addition to those zoning categories which are predominantly

industrial, there are some which allow industrial and other uses. These include the WSI (Warehouse, Service & Industry) district in the Town of Smithtown, the J7 (multiuse) district in the Town of Brookhaven, and the Town of Islip's PDD (Planned Development District). All of these districts allow industrial uses, but much of the designated land contains non-industrial uses.

Zoning is a guide to future development. In developed areas such as Nassau County and the four western towns of Suffolk there has been little change in industrial zoning. Changes tend to be spot changes made by the property owners, or by individual towns. In West Babylon, for example, the Town rezoned 134 acres between Patton and Edison Avenues to industry because of growing industrial development in the area. The Town of Islip found industry in areas of Oakdale, West Sayville, and Bayport that would be incompatible with existing uses and rezoned 289 acres out of the industrial category.

The Town of Brookhaven is a transitional area. Most of the Town's industrially zoned land is still vacant. This affords the Town the opportunity to do major rezonings that are more consistent with sound comprehensive planning. Although the overall amount of industrially zoned land is approximately the same as it was in 1979, there have been significant changes in its location. About 1,600 acres have been recently rezoned for industrial use, while the same amount was deleted from industrial zoning. This change represents a shift in industrial uses from the central part of the Town, which is in the Special Groundwater Protection Area (SGPA),

to areas outside the SGPA. The communities of Coram, Farmingville, Holtsville, Manorville, and Middle Island each had in excess of 100 acres removed from the industrial zoning category. In exchange, over 800 acres were rezoned to industrial uses in Yaphank, and 148 acres were zoned industrial in adjacent North Bellport. This area is likely to be Suffolk's next large industrial complex once industrial development at Long Island MacArthur Airport has been completed.

The Towns of Riverhead and Southampton have substantially reduced their amount of industrially zoned land. Southampton rezoned 4,220 acres, west of the Suffolk County Airport in Westhampton, to a non-industrial category. This area was entirely in the SGPA. Most of the industrially zoned land in the Town of Riverhead was removed from the industrial category. This amounts to almost 7,800 acres, half of which constitutes the Grumman Calverton Airport, including the clear zones at the ends of the runways. The airport, together with the 1,000-acre Calverton National Cemetery, was put in a Defense/Institutional category. Riverhead still has 5,354 acres zoned for industry, 70% of which is in the SGPA.

The Town of Southold is noteworthy because it has made an innovative change in its zoning. All industrial zones along the waterfront were changed to one of two Marine Districts. In the past, industrial districts along waterfronts were common. The current trend is to enhance the waterfront properties by providing a waterfront location for water-dependent and water-related uses

that are more ecologically and environmentally suited to the coastal regime. Other jurisdictions could also benefit from marine districts.

Industrial zoning is a continually changing process, as additions and deletions are made. It appears that much of Long Island's industrial zoning will not change from its present configuration, especially in Nassau County and the western five towns in Suffolk County. Some change is likely, however, in less developed areas where there is an overabundance of industrially zoned land.

Nassau's 7,000 acres of industrial zoned land constitute 18% of the Long Island total. The Mitchell Field area in Garden City East has the largest amount of industrially-zoned land, almost 850 acres. There are also 700 industrially-zoned acres in Bethpage, which includes Grumman's main facilities. The third largest industrial area encompasses 650 acres in Hicksville where the Long Island Lighting Company has its headquarters.

Suffolk's 33,000 acres of industrially zoned land constitute 82% of the Long Island total. Brookhaven alone has 8,300 acres of industrially zoned land, one-fourth of Suffolk's total. The Town of Islip is second with 6,300 acres and Riverhead now ranks third with 5,400 acres.

Concentrations of industrially-zoned land in Suffolk tend to be larger than in Nassau. Nine Suffolk communities each contain more than 1,000 acres of industrially-zoned land. These communities are listed in Table 9.

Table 9
Communities With Over 1,000 Acres Zoned for Industrial Use

Community	Acres	Major Use
Calverton	3,900	Farmland
Westhampton	2,500	Suffolk County Airport
Ronkonkoma	2,000	L.I. MacArthur Airport
Yaphank	1,800	Vacant
East Farmingdale	1,800	Industry
Manorville	1,400	Vacant
Hauppauge	1,400	Industry
Melville	1,300	Industry & Office Bldgs.
Wainscot	1,200	East Hampton Airport

Source: Long Island Regional Planning Board

By combining adjacent industrial concentrations, a better sense of employment centers can be obtained. For example, East Farmingdale and Melville collectively constitute the Route 110 Corridor. Commack and Hauppauge encompass the Hauppauge Industrial Area. Ronkonkoma, Bohemia, and Holbrook are better known as the Veterans Highway Corridor or the MacArthur Airport Area. Deer Park, Brentwood and North Bay Shore collectively contain 1,700 acres of industrial land. An emerging industrial center in the Yaphank, Medford and North Bellport area may be referred to as the Horseblock Road Corridor or the Medford-Yaphank Area.

The amount of industrial zoned land suggests the likely geographic location of future industrial development on Long Island. Equally significant is the amount of land actually used for industrial purposes.

In Nassau, 3,375 acres are actually used for industry. This is equivalent to 47% of all the industrially zoned land in the

County. The Town of Oyster Bay accounts for more than half of all industrial uses in the County. The top four concentrations of industrial uses, all in the Town of Oyster Bay, are Bethpage with 615 acres, Hicksville with 340 acres, Plainview with 280 acres, and Syosset with 200 acres. Port Washington, a rapidly-growing industrial area, ranks fifth with 160 acres of industrial land uses. Industrial land use in Nassau County has grown by only 140 acres since 1979.

Suffolk County now has 9,400 acres of industrial uses on industrially zoned land. This represents three-fourths of the industrially developed land on Long Island. Only 29% of all industrially zoned land in Suffolk has been developed for industry. Suffolk County industry has expanded greatly since 1979. Between 1979 and 1988, approximately 210 acres per year were developed for industrial purposes. A large part of this growth can be attributed to the Town of Islip, which added 1,000 acres of industry between 1979 and 1988. As a result, Islip surpassed Babylon and Oyster Bay to become the most industrialized Town on Long Island. The Town of Babylon added 500 acres of industrial development during this period. Both Hauppauge and Bohemia nearly doubled their amount of industry between 1979 and 1988.

Table 10
Ranking of Communities in Nassau/Suffolk by
Industrially Zoned Land Used for Industrial Purposes

Rank	Community	Acres
1	Hauppauge	1,000
2	East Farmingdale	900
3	Melville	600
4	Bethpage	600
5	Deer Park	500
6	Bohemia	500
7	Ronkonkoma	400
8	Hicksville	300
9	North Bay Shore	300
10	Medford	300
11	West Babylon	300
12	Plainview	300
13	Brentwood	200
14	Kings Park	200
15	Islandia	200
16	Syosset	200

Source: Long Island Regional Planning Board

The Route 110 Corridor in Suffolk has more industry than any other area, with 1,500 acres. The Hauppauge area is second with 1,200 acres, and the Deer Park-Brentwood-North Bay Shore area is third, with 1,100 acres. The fourth largest industrial area is the Long Island MacArthur Airport area. This area has the potential to become the largest industrial area on Long Island. The Yaphank-Medford area is the only area with the potential to become the fifth one-thousand acre industrial area.

There is also significant commercial use of industrially-zoned land in Nassau and Western Suffolk Counties. These uses include office buildings, retail establishments, theatres, race tracks, and privately owned recreation such as racquetball clubs, golf

facilities and amusement parks. Hotels and shopping centers are sometimes found in industrial zones, although the zoning will usually be changed to non-industrial categories. Almost 1,400 acres, or 19% of industrially zoned land in Nassau County, is used for commercial purposes. In the Towns of Hempstead and North Hempstead, one-fourth of the industrially zoned land is occupied by commercial uses. These uses include major office buildings in Mitchell Field and in Garden City East. Other Nassau County communities with concentrations of commercial uses in industrial zones include Carle Place, Lake Success Village, East Massapequa, Jericho and Woodbury.

In Suffolk, approximately 1,600 acres, or 5% of all industrially-zoned land, is used for commercial purposes. Approximately 92% of these commercial uses occur in western Suffolk County, the most developed part of the county. Communities with more than 100 acres of commercial uses are, in order of magnitude: Melville, East Farmingdale, Yaphank, Hauppauge, Calverton and Islandia Village. Most of these have a large amount of office space. Yaphank has a closed racetrack and Calverton has a racetrack and other privately-owned recreation areas.

There has been a trend toward greater commercial use of industrial land as well as conversions from industrial to commercial uses. Land has become so expensive in some areas that commercial use, especially office use, has become the most economically viable land use. High land values and a desirable location led to the creation of Long Island's largest office

centers -- at Mitchell Field and Melville -- on industrially zoned land. There has also been a trend toward converting industrial buildings to retail uses. Carle Place, with its close proximity to Roosevelt Field, East Farmingdale, and Islandia Village are examples of areas in which industrial space was converted to retail uses such as factory outlet stores and discount stores.

Residential use of industrially zoned land tends to be a non-conforming use. That is, houses were generally there before the zoning, but vacant parcels around existing houses were viewed as attractive industrial sites. Under some zoning codes, residential uses are allowed in industrial zones. Often, houses in industrial areas are poorly maintained because the owner perceives the house to be less desirable and, therefore, less valuable. Houses in industrial areas are continually being converted to non-residential use or are torn down to make way for industry. Nassau County only has 114 acres of residential development on industrially zoned land. The only significant amount of residential development within industrial zones occurs in Freeport Village. Suffolk contains 675 acres of residential uses in industrial zones. The town of Riverhead has the largest amount, 290 acres, much of which is in mobile home parks. Because the Town of Riverhead has so much industrially zoned land, this invites residential incursions into industrial zones prior to industrial development.

Occasionally, farms occur within industrial zones. The Town of Southold has 200 acres of farmland in industrially zoned areas, making farmland the largest use category. Likewise, in the Town

of Riverhead, 55% of industrially zoned land is in farmland. Of this, 100 acres is protected from development by the Suffolk County Farmland Preservation Program. The remaining 1,900 acres of farmland is unprotected and is available for industrial development.

The public category includes government-owned buildings and land, including open space. In Nassau County, this is the third largest land use category with almost 1,200 acres. In Suffolk County, there is almost 1,100 acres in public use. Over one-third consists of the County Center in Yaphank.

Transportation facilities and utilities also occur on industrially-zoned land. Included in this category are airports, landfills, commuter parking lots and electric and water supply facilities. Long Island's major airports have a profound impact on the amount of industrially-zoned land because much of the area surrounding them was zoned industrial to reduce the impact of airplane noise on residential areas.

Some industrially-zoned land remains vacant. Nassau County has very little vacant industrially zoned land, only 500 acres, or 6.5% of all industrially zoned land. Half of this land can be found in five communities: Hicksville, Syosset, Old Bethpage, Port Washington North Village, and Plainview. The largest vacant parcel in Nassau County is a valuable sixty-three acre parcel in Plainview that is owned by the Town of Oyster Bay. It is located north of the Long Island Expressway at the Suffolk County line. One-third of all industrially-zoned land in Suffolk remains vacant. Almost

half of this vacant land is in the Town of Brookhaven, which has 5,200 acres vacant.

Since unprotected farmland can be developed more rapidly than vacant land, the two categories should be added together to determine how much land is readily available for development. Available acreage in both categories is summarized in Table 11.

Table 11
Ranking of Communities in Nassau/Suffolk by
Industrially Zoned Land Which is Vacant or in Unprotected Farmland

Rank	Community	Acres
1	Calverton	3,100
2	Manorville	1,300
3	Yaphank	1,000
4	Westhampton	1,000
5	Northville	800
6	East Setauket	600
7	Wainscot	500
8	North Bellport	500
9	Medford	400
10	Holbrook	400
11	Melville	300
12	Ronkonkoma	300
13	Port Jefferson Station	300
14	Brentwood	300
15	Holtsville	200
16	Bohemia	200

Source: Long Island Regional Planning Board

As Table 11 indicates, all of the communities with over 200 acres of available industrial land are in Suffolk County. As industrial development moves eastward, the major impact will be in the Holbrook area and then in the Yaphank-Medford area, which has over 1,400 acres of available industrially zoned land. This is already occurring. East of Yaphank, there are several areas with

large amounts of industrially zoned land available. Calverton is by far the largest with 3,100 acres. Manorville has 1,300 available acres and Westhampton contains 1,000 available acres. Numerous industrially-zoned sites in both Nassau and Suffolk Counties may be reused in the future. This includes property currently used for storage, sand mining, racetracks, residences and obsolete industrial uses. Nassau County has more potential for development through reuse than through development of vacant land. Major reuse sites are listed in Table 12.

Table 12
Major Reuse Sites in Nassau/Suffolk

Name	Community	Acres
Rasons Asphalt	Melville	220*
Grumman Airport	Bethpage	210
Roosevelt Raceway	Garden City East	170
Parr Meadows Racetrack	Yaphank	140
Fairchild-Republic	East Farmingdale	90
Cerro Wire	Syosset	40*
Yorkville Industries	South Farmingdale	30*
Westbury Drive-In	Jericho	20

* Includes land listed as vacant.

Many of these sites are large enough and suitable for building either a regional headquarters or a Planned Unit Development (PUD). A PUD is a mixed use project that can include open space, housing, retail, offices, hotels, or industry. Many waterfront sites that are currently zoned industrial also lend themselves to reuse. Uses such as oil storage tanks are no longer appropriate for valuable waterfront properties. Most waterfront industrial property could

be rezoned to marine districts which would restrict uses to water dependent activities.

When industrially-zoned land is converted to office and retail activities there are increases in peak-hour traffic. In the case of retailing, there is an extension of peak traffic time periods. More vehicles are generated per acre for office and retail uses than for industrial uses which often include warehousing as a component. Warehouses employ relatively few workers per square foot of space. The generation of more vehicles adds to the traffic problem in areas undergoing conversion from industrial to office and retail use.

Industrial square footage on Long Island increased from 104 million square feet in 1979 to 139 million square feet in 1990. The Town of Islip alone added 12 million square feet of industrial space during this period. According to the real estate firm of Greiner-Maltz, available industrial building space in Nassau increased from 1.9 million to 7.5 million square feet between January, 1986 and January, 1993. In Suffolk, vacant industrial space increased from 3.4 million square feet to 10.9 million square feet during this period.

Revenue Mechanisms for Local Government

This section examines revenue mechanisms available to local governments. The sales tax and property tax are major generators of revenues for local governments. The purpose of this analysis is to place in sharper focus the operations of the two existing

local taxes, property and sales. It is also necessary to examine options to improve the effectiveness of tax compliance and administration to assure that these taxes are producing the maximum possible revenues. This section also explores the desirability of shifting a portion of the existing tax burden from the property tax to the personal income tax. The broad array of minor taxes, such as impact fees, user charges and a variety of other nuisance taxes are not examined since they constitute a relatively insignificant portion of the total locally raised revenue stream. The overall goal of the analysis is to increase equity in taxation in order to maximize tax relief for Long Island's severely burdened taxpayers. The ability to project future directions and to enable government to make more rational decisions requires a clear understanding of tax policy.

For much of Long Island's post-war history, the pattern has been one of steady and indeed explosive growth of population, jobs and economic wealth. Despite a series of national and regional recessions, Long Island was virtually recession-proof. Therefore, there was little incentive politically or fiscally to tighten governmental reins or to control the rise in taxation. Moreover, prior to the Tax Reform Act of 1986, Long Island homeowners benefited from the tax shelter provided by tax deductible interest costs on mortgages and property and sales taxes. The following example illustrates the impact of Federal policy on local responses. Prior to the Tax Reform Act, the middle class and wealthier residents who typify a majority of Long Islanders, were

in the 50 to 65 percent combined Federal and state income tax brackets. This meant that up to two-thirds of the cost of the property tax was a deductible item. Furthermore, the sales tax on consumer purchases was also deductible. The Tax Reform Act lowered tax brackets both nationally and statewide, which meant that the majority of Long Island's taxpayers were now in the 36 to 42 percent combined brackets. Since property taxes were not commensurately lowered, the taxpayer actually had an immediate additional out-of-pocket cost representing the loss of one-third of the tax shelter. It could be argued that the loss of property tax deductibility was offset by the reduction in overall rates. If all other factors remained constant this of course would be true. However, the new tax code virtually eliminated or reduced the value of all other deductions and shelters. In addition, a new provision for a minimum alternate tax was created, which is designed to force tax payments at 28 percent. The net result was that the property tax was no longer as effective a tax shelter. Moreover, its very visibility made it a target of overburdened taxpayers. The problem was further exacerbated by substantial property tax increases at a time when the national and state and local economy went into a serious downturn.

The Federal tax revision produced two other impacts that have proven onerous to Long Islanders. The income tax deduction for sales taxes was gradually reduced and ended, thereby eliminating a significant tax shelter for Long Island residents. A third consequence of revision was the Congressional assumption and

requirement that any reductions in the bracket structure should be designed so as to accomplish revenue neutrality. In other words, the net revenue received by the Federal government would remain stable. The President assured Congress and the nation that this would be the case. In fact, a growth in revenue was predicted on the assumption that a lowering of the tax bracket would so stimulate the economy as to produce increased earnings and therefore increased taxes.

New York State has historically indexed the State income tax to the Federal one. As the Federal tax bracket on earned income was dropped from 50 percent to 28 percent, the State bracket was reduced from 15 percent to 8.75 percent. The expectations were that the new system would generate a two billion dollar surplus; and there was no consensus as to whether the surplus should go to new or increased spending, or be used for further tax reductions. The reality was far different. Instead of a two billion dollar windfall, there was an actual two billion dollar shortfall. This four billion dollar gap produced the current programmatic and tax crisis statewide.

If the State hadn't lowered the income tax rate by almost one-half, it could have avoided the shortfall which currently approximates two-thirds of a billion dollars. If the counties had instituted the sales tax increase three years ago, they would have a surplus now instead of a deficit. If budgets were prepared more accurately and more prudently, instead of constantly over anticipating revenues and under estimating expenditures in order

to achieve a political result rather than a sound fiscal result - particularly in election years -- the crisis could have been mitigated. If more governors and members of Congress had been more vigilant, the negative consequences of tax revisions would not have been as severe. At least, Governor Cuomo led the battle to prevent the Congress from eliminating the property tax deductibility. If New York had lost that shelter totally, the economic consequences for New York and all urban states would have been catastrophic.

The Reagan Administration's "new federalism" program placed further burdens on the states. It withdrew federal funding for state functions that were mandated by the Federal government. In New York, the response of the State government has been to emulate the feds and shift the costly mandates to the counties without providing the funding to implement these mandates. The result was increased tax burdens on Long Island.

As of fiscal year 1987, per capita local personal taxes in Nassau-Suffolk, $1,600, were the second highest of any metropolitan area studied. Only the adjacent New York-New Jersey metropolitan area, which includes New York City, had higher per capita local personal taxes, $1,750.

When metropolitan areas are arrayed by region, it becomes clear that local personal taxes in the South are much lower than in the Northeast. In fiscal year 1987, per capita personal taxes in sixteen southern metropolitan areas studied averaged $600, more than one-third below the mean of $900 for ten northeastern metropolitan areas studied, excluding Nassau-Suffolk.

These differences should be interpreted with caution because there are considerable interstate differences in the role of local and state governments in financing locally-performed functions. That is, some local governments have primary responsibility for a given governmental function which in other states may be provided directly by state government. This does not impair the validity of the present analysis whose purpose is to demonstrate the possible impact of the current level of local personal taxes on Long Island's attractiveness to employers.

In most metropolitan areas, property taxes still generate the preponderance of local revenues. However, there is somewhat less reliance on property taxes in the South and West than in the Northeast and Midwest. As of fiscal year 1987, the ratio of property taxes to total local taxes averaged 66% in the South as compared with 74% in the Northeast and 77% in the Midwest. Nassau and Suffolk Counties were characterized by one of the highest ratios of property taxes to total taxes, 80%. Moreover, Long Island's absolute level of per capita property taxes, $1,300, was the highest of any metropolitan area studied. Although the New York-New Jersey metropolitan area, which includes New York City, was characterized by higher per capita total local taxes than Long Island, its per capita property tax burden $800, was actually 38% below that of Long Island. The explanation is that the adjacent New York Metropolitan Area relies to a greater extent on local income and sales taxes and user fees.

It is noteworthy that per capita property taxes on Long

Island, $1,300, were 96% above the mean for the ten Northeastern metropolitan areas studied; 148% above the mean for the seventeen Midwestern metropolitan areas studied; 216% above the mean for the sixteen Southern metropolitan areas studied; and 166% above the mean for the twelve Western metropolitan areas studied.

The property tax is one of the more regressive taxes in use today. That is, the burden of the property tax is greater on the poor than on the wealthy. To the extent that the property tax is not related to benefits received, it is therefore one of the more onerous forms of local taxation. It should be noted, however, that some portion of the property tax is related to benefits received. For example, those metropolitan areas with the highest effective property tax rates also enjoy the highest level of per capita educational expenditures. Many high-technology firms value high-quality educational systems because such systems are a necessary prerequisite for a skilled, technically trained workforce. Therefore, high property taxes are not in and of themselves an absolute deterrent to business location. Rather, the business community evaluates not only the level of property taxes in given areas but also the level and quality of public services that those taxes provide.

The business community is sensitive both to absolute tax levels and to the rate of change in taxes over time. The Nassau-Suffolk metropolitan area had the second highest absolute increase in per capita local taxes of any metropolitan area studied, +$720 between fiscal years 1978 and 1987. The adjacent New York

Metropolitan Area ranked first with a per capita tax increase of +$930 during this period. The average per capita tax increase for metropolitan areas in the Northeast, +$420, was 88% above the average increase in the Western metropolitan areas, +$220. The increase on Long Island was 84% above the average for the other Northeastern metropolitan areas studied.

In relative terms, per capita local personal taxes on Long Island increased by 94% during the fiscal 1978-87 period. This compares with an overall increase of 85% for the ten Northeastern metropolitan areas, 92% for the seventeen Midwestern metropolitan areas, 109% for the sixteen Southern metropolitan areas, and 49% for the twelve Western metropolitan areas. Proposition 13, which limited taxes in California, was largely responsible for the slow growth of tax revenues in the western metropolitan areas. The large relative increase in the southern metropolitan areas reflected that fact that their initial tax levels were relatively low and that local governments in the South had to expand their services and assume new functions in order to serve their growing population and job bases.

The foregoing analysis clearly shows that Long Island is in a poor competitive position by virtue of the second highest level of per capita local taxes of any area studied, the highest level of per capita property taxes of any area studied, and the second highest net increase of per capita local taxes. Although other factors such as labor costs, labor skills, and labor force productivity probably outweigh taxes in the locational decisions

of firms, Long Island's unfavorable tax image becomes particularly onerous in a recessionary environment. Businesses pay close attention to their **bottom line** during recessions. The level of personal taxes does have an indirect effect on that bottom line because employers generally must pay higher wages in high tax areas in order to recruit and retain their desired labor force. This is particularly true of those employers that require specific scientific, technical or business skills.

The findings argue forcefully for government consolidation in order to reduce local personal tax burdens and enhance Long Island's image as a desirable location in the eyes of the business community.

Highway Transportation

The unifying theme of the 1970 Comprehensive Plan was the concept of corridors, clusters, and centers. With regard to transportation, this concept translated into a high density corridor straddling the Long Island Expressway and the Main Line of the LIRR and medium density corridors on the north and south shores encompassing the parkways and other major east-west arterials traversing these areas. Major multi-modal transportation centers were recommended for Republic Airport, Ronkonkoma Railroad Station, Yaphank, and Calverton in addition to minor park-and-ride centers along the Long Island Expressway.

Major components of the highway element of the 1970 plan which could have had a positive impact on mobility, especially when combined with center corridors and cluster land use development,

were never implemented. These included a continuous limited access facility along the north shore, the Northport-Babylon Expressway, reconstruction of the NYS 347 as a limited access facility, extension of the LIE east of Riverhead, and a Sunrise Highway extension. There is still a need for additional highway capacity in the corridors where these proposed improvements are located. Time has only served to exacerbate the situation. However, virtually in each instance, cost escalation, loss of right of way, citizens' objections, and environmental concerns have eliminated these projects from consideration as originally proposed. In addition, many second tier solutions to the congestion in these corridors are hampered by many constraints as well. Working within these constraints as well as the broader limitations posed by a fixed transportation infrastructure and an established pattern of dispersed, low density land use development is the challenge presented as the Board plans for highway and other transportation improvements in the post-2000 period.

Although many of the major improvement projects were never implemented, a great many other capacity increasing improvements recommended in the 1970 plan and the 1978 update were implemented. At the state level, this included the extension of the LIE to Riverhead, the construction of park-and-ride lots and continuous service roads, reconstruction of major segments of Sunrise Highway in the western and eastern areas of the county as a limited access facility, as well as improvements to NYS 25 and NYS 110.

Since 1975, the selection of federally-aided transportation

projects is done through the Transportation Improvement Program (TIP). Projects selected are required to be consistent with the metropolitan regions and the individual county's long-and short-range transportation plans.

The highway system continues to be Long Island's primary transportation resource. With increased industrial growth along the midsection of the County, particularly in the Hauppauge, Bohemia, and Melville areas, the roads, both north-south and east-west, serving these areas bear a greater burden in supporting economic viability.

Nowhere is the importance of adequate highway capacity realized more than in the daily trip to and from work. Due to the increase in the size of the work force, the number of 1990 commuters using an automobile increased over 25 percent during the 1980-1990 decade. This represents an additional strain on a highway system whose capacity has remained relatively fixed.

The extent of reliance on the automobile is further evidenced by the percentage increase in vehicular registrations versus population. In 1970, it was projected that, by 1985, over 2 million passenger vehicles would be registered in Nassau and Suffolk County and that persons per vehicle based on the bi-county population would be 2.0 persons--a decrease from the 1966 figure of 2.5. In actuality, the number of passenger vehicles in 1985 was lower at 1.8 million, but the person per vehicle stood at 1.5. In Suffolk County alone, while the population increased by 17%, private automobile registrations have increased by 73%.

In addition to the traditional reasons for extensive automobile use in Long Island, based on the dispersed nature of housing, shopping areas, and places of employment, auto use has been facilitated in recent years by the increases in the number of households, income per household, the average age of the population, and the number of women in the work force.

The concept of level of service is associated with different operating conditions that occur on a roadway when it accommodates various traffic volumes. It is a qualitative measure of the effect of a number of factors which include: speed and travel time, traffic interruptions, freedom to maneuver, driver comfort and convenience, safety, and vehicle operating costs. Six levels of service have been established and are utilized for highway planning purposes, designated by the letters A through F, providing for best to worst in terms of driver satisfaction. A significant proportion of state and county roads rank D or less.

Agriculture

Long Island remains one of New York State's major agricultural areas. Suffolk was the largest agricultural producing county in the state with sales over $115 million in 1987, the latest year for which comprehensive agricultural data are available. There were 696 farms in Suffolk County in 1987 so that this sales figure translates into an average of $165,455 per farm. This was the highest average sales figure in the state. Suffolk's growing nursery and greenhouse products industry generated $67 million in

sales in 1987, an increase of 60% since 1982. Several hundred acres are devoted to each of the following crops in Suffolk: Cauliflower, broccoli, pumpkins, spinach, and Chinese cabbage. More than 10,000 acres are devoted to potatoes, Suffolk's largest crop.

Although there were more than 40,000 acres of farmland in Suffolk in 1987, there has been a steady decline in the volume of acreage devoted to agriculture. For example, farm acreage declined from more than 123,000 acres in 1950 to less than 90,000 in 1959 to only 61,500 in 1969 in the wake of massive suburban development. In effect, half of Suffolk's farm acreage was lost to farming between 1950 and 1969. During this period, Suffolk's population almost quadrupled from 276,129 to 1,080,155.

In 1987, Nassau County contained 67 farms and 1,471 acres were devoted to agricultural activities. The market value of agricultural products sold in Nassau was $3.4 million. Approximately half of all farms in Nassau were devoted to nursery and greenhouse crops in 1987. Nassau's sale of nursery and greenhouse crops exceeded $1.5 million, almost half the value of total agricultural sales.

Agriculture remains a significant source of jobs for Long Island residents. According to the 1990 Census, 13,783 Long Island residents were employed in farming, forestry or fishing occupations, 5,202 in Nassau and 8,581 in Suffolk. In eastern Suffolk, 5% of the workforce was engaged in agriculture or fishing in 1990.

Part II:

Projections

Population and Labor Force Projections, 2000, 2010

Labor force projections for Nassau and Suffolk counties were derived by applying projected labor force participation rates to the projected population 16 years of age and older in the years 2000 and 2010. The gross numbers were then adjusted to account for unemployment, multiple job holders, part-time workers and trends in commutation. The analysis produced an estimate of the number of workers who will be "available" to fill Long Island jobs in the years 2000 and 2010.

Population. The factors responsible for population change are births, deaths and net migration. In projecting future population levels, recent trends in fertility rates, death rates, inmigration and outmigration were analyzed and extrapolated into the future.

According the Census Bureau, Long Island's 1990 population was 2,609,000. This figure was adjusted upward by almost 60,000 persons to account for estimated census underenumeration, particularly in Long Island's minority communities. Therefore, the 1990 population base used in the projections was 2,669,000. This represents an average annual population gain of 0.24% for the 1980-90 period. Projected fertility rates, death rates and net migration suggest that Long Island's population could grow at an average annual rate of 0.33% between 1990 and the year 2000 and at a rate of 0.35% annually between 2000 and 2010. This would put Long Island's population at about 2,757,000 in the year 2000 and

2,854,000 in the year 2010. Males are projected to number approximately 1,391,000 and females, 1,463,000 in the year 2010.

The Long Island population is expected to continue to age. Persons age 50 and older are projected to increase from 28% of the population in 1990 to almost 40% of the population in the year 2010. Persons below age 20 are projected to decline from 26% to 18% of the population during this period.

Table 13
Long Island's Projected Year 2010 Population, by Age and Sex
(000)

Age	1990*		Year 2000 Projected		Year 2010 Projected		Year 2010, by Sex	
	No.	Percent	No.	Percent	No.	Percent	Male	Female
Under Age 20	697	26.1	560	20.3	517	18.1	264	253
Age 0-4	176	6.6	135	4.9	120	4.2	61	59
Age 5-9	166	6.2	141	5.1	128	4.5	66	62
Age 10-14	171	6.4	154	5.6	143	5.0	73	70
Age 15-19	184	6.9	130	4.7	126	4.4	64	62
Age 20-49	1,225	45.9	1,210	43.9	1,204	42.2	604	600
Age 50 and Older	747	28.0	987	35.8	1,133	39.7	523	610
Total	2,669	100.0	2,757	100.0	2,854	100.0	1,391	1,463

*Note: Adjusted for 1990 census undercount
Source: Long Island Regional Planning Board

The foregoing projections incorporate several assumptions. It was assumed that fertility rates among women over age 30 will remain at relatively high levels and that Long Island's population will continue to become more ethnically and racially diverse. Higher birth rates are associated with Long Island's minority group population. Therefore, these assumptions generate somewhat higher fertility rates than in the recent past. It was also assumed that the influx of immigrants, including illegal and undocumented aliens, will continue at present levels, that an economic recovery will be underway by 1995 and that Long Island's

housing stock will have become more affordable due to declines in real estate values during the recession. These assumptions lead to higher levels of immigration than in the recent past. However, much of Long Island's housing stock will probably remain unaffordable for young families and young single persons. This assumption is partly responsible for the projected decline in the under age 20 population. It has also been assumed that the exodus of college students from Long Island will abate somewhat because of the rising cost of attending out-of-town colleges. Another assumption is that the loss of retirees to sunbelt locations will diminish as crowding and rising costs reduce the quality-of-life in some sunbelt communities. These assumptions generate lower rates of outmigration than in the recent past. On balance, these assumptions generate a slightly faster rate of population growth between 1990 and the year 2010 than between 1980 and 1990.

Labor Force. Projected labor force participation rates in the years 2000 and 2010, by sex, were applied to Long Island's projected population age 16 and older in those years. Male labor force participation rates are projected to rise from 77.5% in 1990 to 77.9% in the year 2000 to 78.3% in the year 2010. This means that 78.3% of all males age 16 and older are projected to participate in the labor force in the year 2010. This would reverse the recent trend toward declining male labor force participation rates. Male rates have been declining as more men have taken advantage of relatively generous pension benefits. However, in the next twenty years, it is anticipated that less

generous pension benefits coupled with the need to generate more of their own retirement funds will induce men to work until older ages. Female labor force participation rates on Long Island are projected to rise from 57.5% in 1990 to 61.0% in the year 2000 to 64.0% in the year 2010. Women will continue to enter the labor force largely in response to greater economic pressures to work.

The foregoing projected labor force participation rates yield a Long Island resident labor force of 1,680,000 in the year 2000 and 1,725,000 in the year 2010. However, not all of these labor force participants will be available to fill Long Island jobs. To derive the "available" labor force, a long-term unemployment rate averaging 5.5% annually was assumed for the 1990-2010 period and the projected labor force was reduced by 5.5%. It was also assumed that the incidence of dual job holding will be completely offset by the incidence of part-time employment so that no further adjustment is needed. Finally, projections of net commutation were subtracted from the projected labor force to derive the available labor force. In projecting net commutation, 1990 census journey-to-work statistics were used as a guide. In 1990, 77.5% of Long Island's resident labor force were employed within Nassau-Suffolk and 22.5% commuted to jobs elsewhere in the New York Region. They were partially offset by an influx of 98,000 workers who resided elsewhere in the New York Region but worked on Long Island. Thus, net outcommutation from Long Island was about 193,000. The proportion of employed Long Island residents who also work on Long Island is projected to increase from 77.5% in

1990 to 79.0% in the year 2000 to 81.0% in the year 2010 in response to the moderate growth of jobs on Long Island in the next twenty years. The ratio of reverse commuters to employed Long Island residents is projected to increase from 7.6% in 1990 to 8.5% in the year 2000 to 9.8% in the year 2010 in response to growing job opportunities in Long Island's service industries. These assumptions yield an "available" labor force of 1,390,000 in the year 2000 and 1,480,000 in the year 2010.

Long Island's resident labor force became more diverse during the 1980s. This process is expected to accelerate during the next twenty years. Minority groups and women will account for a larger share of Long Island's resident labor force. Their growing numbers will confront policy makers with the need to respond to their unique requirements for education, training, and family-responsive policies. Long Island's labor force will also become older and more experienced. This should result in improved worker productivity and greater profitability for Long Island firms.

Employment Projections, Strategic Industries, 2000, 2010

Long Island employment, by major industry, was projected for the years 2000 and 2010. Historical employment trends coupled with recent developments in specific industries were the basis for these projections. The employment projections incorporate the following assumptions:

- General work patterns will not change significantly during the projection period. For example, the average

workweek will not vary greatly.

- The broad social trends of the 1980s and early 1990s will continue. These include increased labor force participation by women and a concomitant increase in the number of dual wage earner households.
- The Long Island economy will experience significantly slower employment growth in the next twenty years than in the past twenty years. The projection period will be dominated by major structural changes in the Long Island economy including the downsizing of the defense sector and the widespread application of automation within the service- producing industries.
- There will be some success in limiting the escalation of taxes and other costs of doing business so that Long Island firms will become more cost-competitive.
- Long Island housing will generally become more affordable. Some higher density housing for young people and senior citizens will be built in some of Long Island's central business districts as retail activity in those CBDs diminishes.

The outlook for specific Long Island industries is as follows:

Construction. Residential construction is expected to be sluggish during most of the 1990s because of Long Island's aging population, the relatively large number of existing homes on the market, the scarcity of buildable land, and the need to protect

sensitive environmental resources. Somewhat faster growth is projected between 2000 and 2010. Federal subsidies for moderate income or senior citizens housing could generate additional construction jobs. Federal funding to improve the energy efficiency of existing structures could also be a source of employment growth. New non-residential construction is likely to remain on hold until the surpluses of retail, commercial and industrial space generated during the 1980s are absorbed. This is not likely to occur until relatively late in the 1990s. However, the need to repair or replace Long Island's aging infrastructure including its schools, streets, highways, bridges, sewers and waste disposal facilities is likely to create new construction jobs, particularly after the year 2000.

Manufacturing. Long Island's manufacturing base is projected to contract during the 1990s and to grow only moderately after the year 2000. Although manufacturing industries predicated on emerging technologies already have a foothold on Long Island and are likely to develop marketable products by the late 1990s, the jobs created in these industries will probably not be sufficient to offset the downsizing of the defense sector before the year 2000.

The technologies in which Long Island possesses competitive advantages are advanced materials, electronics and information systems, future manufacturing systems and the life sciences. Advanced materials such as ceramics offer high-temperature strength and corrosion resistance, characteristics needed in

products used at very high temperatures. Low temperature superconductors have performance characteristics that will lead to the development of powerful magnets for medical diagnostics and for magnetically-levitated (Maglev) trains. New technologies relating to electronics and information systems include advanced semiconductor devices, digital imaging technology, high-density data storage, high performance computing, and optoelectronics. Advanced semiconductors offer improved speed, higher operating frequencies, reduced size, and multiple functions at lower cost. They will be used in products that require the significant use of electronics. Digital imaging technology, which uses digital technology to store, display, process, analyze and transmit images, will be used in industrial processes in which the human eye or other detectors are currently used for inspection and monitoring. High density magnetic discs, which incorporate thin-layer technology, will provide steady increases in information density and will reduce the time needed to retrieve data from disks or tapes. High performance computing will make it possible to program large systems to perform complex tasks. Optoelectronics, the use of light to transmit, process, and store information, will have a major impact on chemical and mechanical manufacturing processes, medical diagnostics, and medical therapy.

Future manufacturing processes will be dramatically changed by artificial intelligence, flexible computer-integrated manufacturing, and sensor technology. Artificial intelligence, which incorporates knowledge-based control systems, will

revolutionize the manufacture of machine tools and robots and the analysis of medical tests and symptoms. Flexible computer-integrated manufacturing will improve product quality and allow manufacturers to produce small lots in response to specific customer orders. This will ultimately lead to a much greater variety of product lines. New sensors that measure parameters more accurately in real time will have a major impact on continuous process industries such as food and beverages, pharmaceuticals, and chemicals.

In the life sciences, advances in biotechnology will lead to the production of high value added biological products on a commercial scale. Target markets for this emerging industry include pharmaceuticals, foods, flavors and fragrances, agricultural chemicals, and pollution abatement. Advances in medical diagnostic technology, including cellular-level sensors, medical imaging, targeted pharmaceuticals and fiber optic probes, will make it possible to detect defects at the cellular level and to minimize trauma during diagnosis and treatment.

Long Island already possesses much of the infrastructure needed to commercialize new developments in these fields. The Center for Biotechnology at SUNY, Stony Brook, one of the state's Centers for Advanced Technology, provides an important link between life science researchers at Stony Brook and the area's growing biomedical industry. The Center's Seed Grant Program invests over $500,000 annually in innovative research projects with demonstrable economic potential. The new Long Island High

Technology Incubator on the Stony Brook campus gives start-up biotechnology companies access to affordable laboratory space, research equipment, and business assistance. The newly-formed Long Island Research Institute, a partnership between SUNY, Stony Brook, North Shore Hospital, Cold Spring Harbor Laboratory and Brookhaven National Laboratory, will be a vehicle for faster commercialization of the new technologies originating in these institutions. The College of Engineering and Applied Sciences at Stony Brook is planning to sharply increase its role in technology transfer through its Advanced Manufacturing Initiative. The Initiative may include visits of engineering faculty to industrial facilities to learn key problems and to assess industry priorities, onsite technology surveys to assist companies in their modernization agendas, and work opportunities for those in industry in Engineering College laboratories. The purpose of the Advanced Manufacturing Technology Initiative is to create a self-renewing resource that will assist companies in making the transition to the "agile" manufacturing environment of the 21st Century.

However, Long Island is only one of many areas that are competing for high-technology activities. Therefore, it may achieve a certain threshold level of jobs from which growth can proceed in only a limited number of these technologies. Moreover, small entrepreneurial businesses generate relatively few jobs at the outset. Therefore, although some of these technologies are likely to take hold on Long Island during the 1990s and beyond,

the employment they generate is not likely to offset the loss of defense manufacturing jobs until after the year 2000.

Transportation, Communications, Utilities. Segments of the transportation industry, notably trucking and warehousing and transportation services, show good growth potential. Within communications, cellular phone and fax communications are growing industries. The movement of cable companies into information systems will also generate jobs. However, the communications industry is highly cost competitive and has become increasingly dependent on labor-saving technology. This will tend to offset employment gains in some of the expanding communications industries. For utilities, the need to solve solid waste disposal problems and to develop alternative energy sources will create new jobs during the 1990-2010 projection period.

Retail Trade. During the late 1980s and early 1990s, Long Island lost several well known retailers who were, in turn, supplanted by major nationally-based discounters. The new firms include K Mart, Home Depot, the Price Club, and T.J. Maxx, among others. These retailers are highly efficient and price competitive. To some extent, they are taking market share from existing retailers, particularly those located in some of Long Island's older central business districts. Also a factor is the growing interest in home shopping. Because of this situation, projected retail growth for the 1990-2010 period is likely to be more modest than during the 1980s. In addition, full-time retail workers are likely to be supplanted by part-time workers. The

trend toward efficiency and price competitiveness has become a permanent fixture of the retail sector. At the low and middle end of the market, less efficient retailers will continue to lose market share. However, upscale retailers, who compete not on price but on quality, style and customer service, will continue to do well because of Long Island's high level of disposable household income.

Finance, Insurance, and Real Estate. In the next two decades, banks and insurance companies are projected to assume new functions and to diversify into innovative types of financial services. These will include so-called non-interest or fee-based products such as mutual funds and annuities. These products will provide supplemental income to banks whose earnings have traditionally come from interest on loans. The job growth generated by these new products will be somewhat offset by the proliferation of automatic banking and electronic funds transfers which will tend to limit employment growth. Within real estate, the fastest employment growth will be in the area of property management and other real estate services.

Services. The service industries show the strongest potential for employment growth during the projection period. There will be a growing need for health care services as Long Island's population ages. New medical procedures and treatments and the likelihood that the Federal government will guarantee basic universal health care will also increase the demand for health care workers. However, such guarantees will be accompanied by

cost containment efforts. On balance, health care employment will continue to expand, albeit at a slower pace than in the recent past. Moreover, the direction of growth is likely to change with more resources devoted to preventive care and fewer resources to specialized care.

The business services industry is expected to expand strongly during the projection period. Temporary personnel agencies, consumer credit reporting agencies, firms providing mailing, reproduction and stenographic services, firms providing building maintenance services, equipment rental and leasing firms, firms providing computer programming and related services, and firms providing security and protective services should do particularly well.

Professional services, notably legal, engineering and management services, also have good growth potential. Just as Long Island "exported" sophisticated defense products during the 1980s, it is likely to "export" a variety of professional services to clients located nationally and even internationally during the projection period.

Government. The growth of government employment is likely to be extremely slow during the projection period. Revenue constraints will encourage privatization of some governmental activities and consolidation of others. Consolidation of some local school district functions is likely. Job growth in local government is likely to be confined to agencies that help the disadvantaged, promote industrial retention and economic

development, and build or maintain public facilities.

Based on these trends, a total of 1,370,000 jobs are projected for the year 2000 and a total of 1,488,000 jobs are projected for the year 2010. This compares with estimated employment of 1,362,000 in 1990 and 1,276,000 as of June, 1993. Both current employment estimates and projections of future employment include estimates of self-employed persons on Long Island. The Long Island labor market lost an estimated 86,000 jobs between 1990 and June, 1993. It is unlikely that these jobs will be regained until late in the decade. These projections suggest that there will be a net gain of only 8,000 jobs on Long Island between 1990 and the year 2000 followed by a gain of 118,000 jobs between 2000 and 2010.

Projected slow growth during the 1990s reflects the fact that the current recession is more a product of the basic structural realignment of Long Island's economy than of the effects of a normal cyclical downturn. Such structural changes require an extended period of time because new technologies must be incorporated into the workplace and the workforce must be trained and retrained to utilize these technologies. Only then can a new round of entrepreneurial development and economic growth begin. There are also unique factors that will tend to inhibit employment growth on Long Island during the 1990s. The Long Island economy is a relatively mature economy. As a result, the market for many products and services is approaching saturation. Therefore, the explosive job growth of the 1980s is no longer possible even under

the best of circumstances. The national economic environment will also limit Long Island employment growth in the short-run. The urgent need to reduce the Federal budget deficit has generated a combination of tax increases and declines in Federal entitlement and other benefit programs. In the short run, this will siphon purchasing power from the economy thereby limiting employment growth.

Table 14

Projected Long Island Employment by Industry, 2000, 2010
(Thousands of Jobs)

Industry	Estimated Employment* 1990	June, 1993	Projected Employment 2000	2010	Percent Change 1990-2000	2000-2010
Agriculture, Forestry, Fisheries	14.0	13.8	14.0	14.0	0.0	0.0
Construction	68.0	46.7	69.0	74.0	+1.5	+7.2
Manufacturing	167.5	140.0	155.0	162.0	-7.5	+4.5
Transportation, Utilities	56.3	56.8	60.0	63.0	+6.6	+5.0
Wholesale Trade	95.6	87.1	94.0	99.0	-1.7	+5.3
Retail Trade	248.0	238.6	252.0	276.0	+1.6	+9.5
Finance, Insurance, Real Estate	113.6	110.0	115.0	130.0	+1.2	+13.0
Services	423.0	405.0	432.0	487.0	+2.1	+12.7
Government	176.0	178.0	179.0	183.0	+1.7	+2.2
Total	**1,362.0**	**1,276.0**	**1,370.0**	**1,488.0**	**+0.6**	**+8.6**

*Includes estimates of self-employed workers
Source: Long Island Regional Planning Board

It is important to note that slower job growth during the projection period is not likely to lead to chronically higher unemployment rates on Long Island. In the year 2000, a projected labor force of 1,390,000 will be available to fill a projected 1,370,000 jobs. Thus, the balance between projected labor force and projected jobs is relatively close. It becomes even closer in the year 2010 when a projected labor force of 1,480,000 will be available to fill a projected 1,488,000 jobs.

Although it is unlikely that overall labor force shortages will constrain employment growth during the projection period,

selective labor force shortages in specific occupations are a real threat. Future job growth will be concentrated in relatively sophisticated, technologically-oriented manufacturing industries and in those professional, business and health services that require advanced training. However, much of the projected growth of Long Island's labor force will result from greater labor force participation by women and minority groups, including recent immigrants. These labor force groups remain overrepresented in declining blue-collar occupations and in low-paying administrative support and service occupations. One challenge facing Long Island's educational institutions will be to educate and train these workers for future Long Island jobs. In addition, tomorrow's workforce will be organized differently. The traditional hierarchical structure in which instructions are passed from the top down and workers have only to follow directions will largely disappear. This model was useful for mass production operations but is not well suited to the high-performance work organizations of the future. Future workers will be given more authority to make decisions. That is, they will be "empowered". They will be asked to work cooperatively in teams to solve increasingly complex problems. Control will be decentralized and workers will find it necessary to adapt quickly to changing circumstances. Instead of the long production runs associated with the hierarchical model, production will be flexible and geared to each customer's unique requirements. Quality control will be built into the process at every stage. Promotions will

be predicated on skill levels rather than on seniority. Workers will be encouraged to develop multiple, interchangeable skills and will be rewarded accordingly. These developments suggest that there will be unremitting pressure for Long Island workers to improve their skills and work place competencies.

The future Long Island labor market will be markedly different from that of the 1980s. The 1990s will be a period of structural transition. Recovery from the current recession will be slow. A new round of entrepreneurial development and economic growth will be predicated on the incorporation of new technologies into the workplace and the training, retraining and reorientation of the labor force to fully utilize those technologies.

Industrial Projections

As the foregoing projections indicate, future manufacturing growth will occur in industries that utilize emerging technologies in fields such as advanced materials, superconductors, high performance computing, optoelectronics, artificial intelligence, biotechnology, and medical diagnostic technology. These types of industries produce high value-added products. However, they do not generally have the extensive space requirements of defense firms and of other manufacturers that utilize long production lines. Therefore, Long Island currently has sufficient industrial space to accommodate projected manufacturing growth through the year 2010. However, much of our existing industrial space consists of older buildings which are becoming increasingly obsolete. Given

the high cost of renovating older buildings, future manufacturers might well opt to build new buildings specifically tailored to their specific needs.

Long Island is particularly hospitable to small, "home grown" manufacturing industries. Small multi-tenant units can be found in nearly every community that has industry. They are especially prevalent in West Babylon, Deer Park and the MacArthur Airport area. Small industrial buildings can also be found in East Farmingdale and New Cassel. Many of these multi-tenant buildings are relatively new and sufficiently flexible to accommodate various sized manufacturing operations. Inevitably, many of these small industries will prosper, grow and expand. Some expanding firms will choose to build a large single use facility especially designed to house their businesses.

An analysis of past rate at which industrially-zoned land was developed is useful in forecasting future development trends. Between 1979 and 1984, 845 acres were developed for industry. This was equivalent to an average of 169 acres per year. From 1984 to 1990, 1,464 acres were developed for industry. This was equivalent to an average of 244 acres annually.

In the future, development of industrially-zoned land will proceed at a much slower pace. The expectation is that the current glut of available industrial space -- more than 18 million square feet -- will not be absorbed until late in the decade. Therefore, it seems likely that an average of only 100 to 150 acres of industrial land will be developed per year during the projection

period. Even at the pace of 150 acres per year, Long Island's 15,000 acres of industrially zoned vacant land and farmland would allow for a century of continuous industrial growth. The 2,200 acres of reusable industrial land would be an additional fifteen year supply. If the pace of development dropped to a more realistic 100 acres per year, there would be a 170 year supply available.

Even if none of the industrial land in the Special Groundwater Protection Areas (SGPAs) were developed, Long Island would still have an adequate supply of available industrially-zoned land. Half of the vacant land and farmland zoned for industry is outside the SGPAs and nearly two-thirds of reusable industrial land is outside the SGPAs. The supply of industrially-zoned land outside the SGPAs could accommodate 100 to 150 acres of industrial growth annually for 61 to 91 years.

Projected Highway Needs

Both passenger and commercial vehicle registrations on Long Island have grown steadily over the years. The length and weight of trucks permitted on our major routes have increased as well. According to the New York Metropolitan Transportation Council, commercial vehicle registrations are expected to grow by 142% between 1985 and 2015.

As the number of commercial vehicles on the roads increases, highway capacity is commensurately reduced. The added length and weight of vehicles permitted also increases the probability of major accidents which may result in fatalities and traffic

bottlenecks. These trucks also add greatly to the wear and tear of the roadways. As a result, Long Island's roadways require more frequent repairs at a time when there is a crisis in funding for highway maintenance.

Since Long Island is dependent on truck freight to maintain its economy, decisions regarding the size and weight of vehicles permitted on the roads, and the time of day they are permitted, must be carefully weighed against the potential accident, highway repair, and congestion impacts. In addition, alternatives for east-west commercial travel should be provided, such as the long recommended central Long Island corridor improvements and piggyback freight service on the LIRR.

The 1970 transportation plan expressed deep concern over the trend towards greater reliance on the use of the automobile, which, if continued, would "...require substantial new highway construction, add additional loads on the existing system, and create conflicts in community compatibility and environmental protection." Despite the implementation of an extensive bus system and the recent electrification of the Main Line of the LIRR, these dire predictions have come true.

Approximately 7.7% of Long Island highways have major capacity deficiencies. Roads with major capacity deficiencies are characterized by stop-and-go travel and travel speeds of less than one-third to one-half the posted speed, and by the inability to handle traffic demands along their entire length. It has been estimated that just to maintain the current level of infrastructure

and capacity deficiencies would require $2.1 billion between now and the year 2000.

Motor vehicle registrations are expected to grow through the post-2000 period. When this growth is translated into automobile trips, it is projected that vehicular trip ends in Suffolk County alone will increase by 15% between 1985 and the year 2015.

New York State publishes yearly highway sufficiency ratings for all roads in the state. These ratings are based on the condition of pavement, underlying structural integrity, accidents per mile and volume-capacity ratio. Any road segment having a score above or below a set level in any one of the evaluation areas is "red flagged" for further analysis. This is one of the primary analytical tools used by the state to identify roads for repair or reconstruction. The 1987 red flag list for Suffolk County includes major segments of every state highway.

Projected Office Space Needs

Approximately one-third of all persons in office-type jobs on Long Island worked in major office buildings in 1988. At the end of 1992, there were an estimated 36,352,000 rentable square feet of space in major office buildings on Long Island. Major office buildings are defined as corporate office buildings of at least 15,000 square feet.

It is projected that 126,000 jobs will be generated on Long Island between 1990 and the year 2010. Approximately 70,000 of these will be office-type jobs. One-third of the office-type jobs,

approximately 23,000, are likely to be located in major office buildings. At a ratio of three employees per thousand square feet of office space, approximately 7.7 million square feet of major office space will be needed to house those additional employees.

At the end of 1992, an estimated 6,956,000 square feet of space in major office buildings on Long Island was vacant according to the Greiner-Maltz Business/Real Estate Report. This was equivalent to an 18% vacancy rate in Nassau and a 22% vacancy rate in Suffolk. Just as a given unemployment rate is considered to be full employment, there is a vacancy rate for office space that is considered to be full occupancy. For example, at any point in time, some offices are vacant due to a change in tenants and to the renovations associated with such a change. However, during the boom years of the late 1980s, vacancy rates in Long Island's major office buildings vacillated between 10% and 20%.

For purposes of analysis, vacancy rates of 10% and 20% in major office buildings were assumed. With a vacancy rate of 10%, which is equivalent to an occupancy rate of 90%, approximately 3.6 million square feet of the projected 7.7 million square feet needed to accommodate future office jobs would come from existing major office buildings. At the end of 1992, 764,000 square feet of major office space was under construction on Long Island. Therefore, even at a 10% vacancy rate, which is relatively low, 3.7 million square feet of major office space would be needed on Long Island through the year 2010 to accommodate projected office-type jobs. With a 20% vacancy rate, which is equivalent to an occupancy rate

of 80%, an additional 9.0 million square feet of additional office space would be needed by 2010.

Projected Revenue Needs

The personal income tax has several distinctive qualities which make it a superior tax. It is capable of raising large amounts of revenue. It is a progressive tax that is related to taxpayers' "ability-to-pay." It is also highly income elastic, with an elasticity exceeding two. This means that for every 1% rise in income, tax collections rise by 2%. In addition, it can be levied as a surcharge on the state-administered income tax at virtually no additional cost. Moreover, it meets the criteria for both horizontal and vertical equity. Horizontal equity means that individuals in similar circumstances -- those that have similar incomes -- are treated equally. Vertical equity assures that those in different income circumstances are treated differently.

These virtues suggest that the enactment of a local personal income tax as a surcharge on the current state personal income tax could provide much-needed property tax relief. As is New York City, both Long Island residents and non-residents working on Long Island could be made subject to the tax. Such a tax could go a long way toward meeting the revenue needs of local government on Long Island. A key question is: To what extent would it trigger taxpayer flight? That is, to what extent would enactment of such a tax cause Long Island residents to relocate elsewhere. Since the objective is to relieve the burden they currently endure from the property tax, it can be assumed that the combination of property

tax relief and the amenities of the Long Island lifestyle could offset the effects of a local income tax surcharge.

There is also the danger that Long Island businesses would view the income tax surcharge as a threat to their ability to recruit workers and executives from lower-taxed areas. Thus, they might be forced to pay higher wages as an inducement to workers to relocate to Long Island. However, the real impact on the workforce might well be marginal. Lower salaried workers would generally escape the tax, and higher salaried persons might actually benefit because their residential property taxes would decline.

Obviously, an income tax surcharge must be designed, legislated, monitored, and controlled so that every dollar of income tax collected results in a one dollar decline in revenues derived from the property tax. If revenue from the income tax surcharge is merely viewed as another pot of money for the public sector to expend on new programs, or increased salaries, or new capital expenditures, then the new tax would only exacerbate an already serious fiscal crunch. Thus, the guiding principle must be that of **revenue neutrality**. This term means that the shift from one tax form to another is for the sole purpose of raising an identical amount of revenue. One could then legitimately ask: why bother if the revenue is the same? The answer lies in the need for equity in taxation. While total revenue raised would remain the same, the burden of taxation would shift from those least able to bear it to those most able, by virtue of their incomes and economic status, to bear it.

Data concerning the origin of current income tax revenues illustrates this point. Two-thirds of the total income tax revenue raised in Nassau County, and one-half of that raised in Suffolk County comes from the two highest income groups. Collectively, taxpayers in these income groups account for only 39% of the population. This is a clear indication of the progressivity of the income tax. The property tax, a regressive tax, falls much more heavily on lower-income taxpayers.

If a 10 percent surcharge on the personal income tax were levied on wage earners whose adjusted gross income exceeds $50,000, Nassau County would receive over $100 million, and Suffolk County over $50 million, based on 1987 earnings. This is equivalent to approximately 7 percent of the property taxes that were levied in 1987 for school districts in Nassau County, and to 5 percent of the property taxes levied for Suffolk school districts. Thus, for every 1 percent surcharge on the income tax, there would be a 0.7 percent reduction in the Nassau property tax and a 0.5 percent reduction in the Suffolk property tax, assuming that all of the new revenue would be used for school costs. This is based on a straight line tax calculation. In reality those earning more than $50,000 pay a proportionately higher share of the property tax due to the progressive tax table. The actual relationships are closer to 1:1, or for every 1 percent surcharge, there would be almost a 1 percent reduction. If the surcharge revenue is used in conjunction with a regional finance plan for school districts, then the money would add support to the districts with less than average

wealth per pupil, allowing for improved services and programs in those districts.

Part III:

Recommendations and Implementation

Recommendations: Manufacturing, Industrial Development

Economic dislocations caused by declining defense expenditures appear likely to continue on Long Island for the foreseeable future. Therefore, Long Island must move forcefully to exploit its potential for non-defense high-technology activities. This will require the active assistance and support of the Federal government and the state. For example, New York State should fund its highly successful Industrial Effectiveness Program at higher levels.

The U.S. government currently spends about $76 billion on research and development programs, of which 60% is directed to defense purposes and 40% to civilian purposes. President Clinton has suggested in several policy papers that he plans to curtail defense-unique research programs and to shift the mix between defense and non-defense research programs back to a 50-50 balance. This move alone would free up $7 billion for non-defense research and development. According to Clinton policy papers, these funds would be directed toward so-called "critical technologies" such as advanced materials, information technology, and new manufacturing processes. Long Island firms already have a foothold in some of these industries and that foothold can be substantially enlarged through Federal funding.

In March, 1993, the Clinton Administration announced a program of defense technology conversion, reinvestment and transition

assistance. It is called the Technology Reinvestment Project and is administered by the Defense Technology Conversion Council. Under the program, Federal funding is available to Long Island businesses, governments, and universities in three activity areas: technology development, technology deployment, and manufacturing education and training. The mission of the technology reinvestment project is to develop the most advanced, affordable, military systems while at the same time developing the most competitive commercial products. In order to achieve these goals, the program stresses the development of dual-use technologies, manufacturing and technology assistance to small firms, and education and training programs that enhance U.S. manufacturing skills and help displaced defense industry workers.

This funding will be especially critical to the survival and growth of small manufacturing firms. An increasing share of the nation's technology is being developed by small firms. However, small firms are least able to assume the risks associated with the commercial development of state-of-the-art technologies. Thus, it appears that the costly process of commercializing technology must be subsidized by government if it is to proceed. Moreover, rapid commercialization, aided by government, can give U.S. companies cost advantages in production that cannot easily be overcome by foreign competitors.

One or more state-of-the-art manufacturing teaching factories, funded in part by the Federal government but representing a cooperative effort between industry, government and academia,

could help to revitalize Long Island's manufacturing base and encourage the development of dual-use technologies. The concept of a teaching factory is analogous to that of a teaching hospital. It would allow Long Island's manufacturers, particularly its small and medium-sized manufacturers, to explore new manufacturing practices, technologies, processes, and equipment. At the same time, it would provide access to valuable technical training and skill enhancement programs. Such factories would demonstrate and use advanced production processes and equipment and would employ the newest materials. They would also offer help in marketing, finance, and general management and would be available to manufacturers on a shared basis.

Such teaching factories could be particularly valuable to the Long Island economy. A number of analysts believe that the world is currently on the threshold of the next history-changing group of basic innovations. The rationale for this prediction is as follows: the post-war period has been largely dominated by technologies developed during or immediately after World War II. The applications of these technologies have now been fully realized. In this situation, the return to capital tends to decline and investors, seeking a better return on their capital, begin to invest in more risky ventures. They invest in promising new fields, which ultimately generates new clusters of basic innovations.

Experts suggest that we are currently at that stage in the innovative cycle where investment capital flows from mature

industries into new and untested technologies. If we are indeed on the verge of a new round of technical innovations, Long Island, with its unique educational facilities and technically-trained manpower, is well positioned to be at the forefront of these developments. The following industries are likely to be the major high-technology growth industries of the 1990s: semi-conductors and integrated circuits, microprocessor applications, computer software, electronic information and communication systems, genetic engineering, fiber optics, automation, medical diagnostics, and energy production and conservation.

Improvements in electronic and computation equipment suggest that these products will be in strong demand over the next decade. The market for large-scale integrated circuits will be particularly strong. The computer software industry will also grow rapidly as uses for personal and business computers proliferate. In coming years, micro-electronic intelligence is likely to be incorporated into a wider range of products including automobile engine and dashboard controls, home computers, and home appliances. Therefore, microprocessors, which operate in conjunction with the memory circuits and input-output devices that are the basis of many computer-type capabilities, will be in strong demand. Electronic information and communications systems will also proliferate. Their applications include banking and a variety of other financial transactions accomplished by electronic fund transfers, and home entertainment, where access to several hundred channels will occur in the foreseeable future.

The genetic engineering industry involves the manipulation of genetic material to control the acquisition of traits and characteristics that will be replicated in future generations. It involves germ plasma development, monoclonal antibody technology and gene splicing. The most immediate applications may be in the therapeutic and diagnostic area and will include hormones, vaccines, insulin and cancer-fighting drugs. Other promising fields include fiber optics, photo volatics and other solar technologies, cogeneration equipment and energy saving appliances, advanced composite materials, propulsion systems, advanced sensors, and artificial intelligence.

The entire field of biomedical research is particularly ripe for exploitation by Long Island firms and institutions. The biomedical research complex includes a diverse array of manufacturing and service industries. It includes manufacturers of medicinals, botanicals and pharmaceuticals, diagnostic substances, laboratory apparatus and analytical instruments and surgical and medical instruments, appliances and supplies. It also includes medical laboratories and hospitals.

The biomedical complex is already a formidable economic force on Long Island. As of the second quarter of 1992, some 352 establishments within the biomedical complex collectively employed more than 59,000 persons on Long Island. Of these, more than 36,000 were employed in Long Island's general hospitals and almost 6,000 in its psychiatric hospitals. Almost 2,800 workers were employed in Long Island's fledgling pharmaceutical industry and

an additional 2,700 worked in its medical laboratories. Moreover, the biomedical industries are characterized by relatively high-paying jobs. As of the second quarter of 1992, average annual Long Island salaries were $29,884 in pharmaceuticals, $35,520 among manufacturers of analytical instruments, $44,816 among manufacturers of electromedical equipment, and $27,236 in bi-county general hospitals. This makes the biomedical industry a good candidate to take up some of the slack caused by the downsizing of the defense industry. Although reform of the U.S. health care system is likely to result in declines in hospital-based employment, the health care industry is likely to continue to grow with health care services delivered in other, more cost-effective settings.

Another way of evaluating the importance of the biomedical complex is to examine recent changes in funding for biomedical research on Long Island. Such funding comes primarily from the National Institutes of Health (NIH) and the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA). In 1990, Long Island firms and institutions received almost $57.2 million in research funding from these agencies and accounted for 9% of overall funding from these agencies within the metropolitan New York-New Jersey region. The dollar value of NIH and ADAMHA funding attracted by Long Island firms and institutions actually increased by 30% between 1987 and 1990 as compared with a regional increase of 18% and a New York City increase of less than 15%. Funding for biomedical research on Long Island also grew rapidly between

1987 and 1990 when compared with the growth of such funding in other cities and metropolitan areas.

In order for the biomedical industry on Long Island to continue to grow, additional emphasis must be given to the process of technology transfer. The formation of the Long Island Research Institute represents a major step toward facilitating the commercialization of technologies originating in Long Island laboratories. The Institute plans a $25 million venture capital fund to finance start-up companies or new technologies. SUNY, Stony Brook's Center for Advanced Technology (CAT) is also an important vehicle for the commercialization of new technologies. Various studies have also shown that several practices within institutions such as universities support and enhance the process of technology transfer. These practices are listed below:

Success in licensing deals
Entrepreneurial culture within the office
The expectation that faculty invent and innovate
The move away from a legal and toward a business perspective
University support for entrepreneurship
An institutional culture that supports technology transfer
The monitoring of young faculty
Time spent marketing
The expectations of the community
Networking of technology transfer staff and scientists
Collaborations with industry
Flexibility on faculty policy
Close relationships with local companies
Reading manuscripts and grant proposals
The formation of a separate university technology company

Long Island also has a large and growing presence in the information technology industry. This industry includes firms that manufacture computers, office and communications equipment and

those that provide computer programming, data processing and communications services. A 1991 survey by S.U.N.Y., Stony Brook's Office of Regional Development located 850 Long Island firms in these industries. They included NEC America, Inc. and Miltope Corporation, two large Melville manufacturers of computer-related equipment. They also included Computer Associates in Islandia and Grumman Data Systems in Woodbury, large employers that provide computer programming services. However, the information technology industry on Long Island is currently dominated by small firms such as Flexible Business Systems, a Melville employer specializing in computer sales, leasing, and repair. These firms generally employ fewer than twenty workers. Many of them could be poised for growth as the demand for information services intensifies.

The revolution in telecommunications technology, powered by fiber optics and digital technology, will change the way our society delivers some of its most vital services. The new technology will create high-wage, high-skilled jobs, reduce the cost of health care and improve its accessibility, and reduce pollution through telecommuting and video conferencing.

The video conferencing industry alone is projected to be an $8 billion business nationally by the year 1997. The industry has the potential to reduce travel costs and create more efficient meetings. Telecommunications technologies also have the power to transform education. Through long-distance, computerized learning, students in the poorest districts will be able to share

educational resources equally with their counterparts in more wealthy communities. Advanced telecommunications will also have a dramatic impact on the delivery of health care services. The technology offers the potential to deliver high quality health care to even the remotest areas by linking specialized care facilities and urban research centers with rural hospitals and clinics.

Telecommunications technology will be a major catalyst for economic development and social change. Long Island, which already has a substantial foothold in this industry, should adopt policies that encourage its continued growth.

Long Island firms that exploit emerging technologies, hopefully with the Federal government as a partner, will ultimately generate the high value-added jobs needed to take up some of the slack caused by the declining defense sector. Moreover, the new jobs will be more cyclically stable because they will not be subject to the vagaries of the defense budget.

One of the immediate challenges confronting Long Island is to retain the unique scientific and technical skills of displaced defense workers within the Long Island economy. Long Island's high-technology industries are footloose in the sense that they are not tied to raw materials or other natural resources. Their primary resource is brainpower. Much of that brainpower can come from defense industries which are currently in the process of downsizing.

Several Long Island universities have already moved to harness the skills of displaced defense workers and to retrain them for

future Long Island jobs. For example, at Polytechnic University, displaced defense workers can audit classes at no charge to learn new skills or can take graduate courses toward a degree at half the regular tuition. The program recognizes that displaced defense industry workers have an inherent advantage in learning some of the newer technologies because many are trained quantitatively. SUNY, Stony Brook has undertaken a high-technology entrepreneurship program designed to identify prospective high technology entrepreneurs and help them start their own businesses. SUNY, Stony Brook's Harriman School for Management and Policy experimented with a federally-funded program to train displaced defense engineers for more marketable careers in environmental sciences, computer information services, biotechnology, and commercial engineering. The $1.5 million program was known as the Jobs Project and was partially funded by the Suffolk County Labor Department.

Another challenge is to give small Long Island manufacturers access to adequate capitalization. The lack of adequate capital often precludes small manufacturers from modernizing their plant and equipment, a step that is generally crucial to their long-term success and viability. It is essential that those agencies and institutions charged with economic development work closely with the financial community, with New York State, and with the Federal government to ensure that existing financing programs are effectively utilized and that new programs tailored specifically to the needs of small manufacturing firms with limited collateral

are put into place.

As Long Island's defense-dependent manufacturers have attempted to make the transition to civilian markets, a major obstacle has been the lack of working capital financing. To address this need, Suffolk has been working with Nassau, the New York State Department of Economic Development and a consortium of local banks to establish a "working capital loan pool" for Long Island manufacturers, particularly defense-dependent manufacturers. The goal is to help them diversify. Initial capitalization for the pool has been provided by the Federal Economic Development Administration through a $2 million grant to New York State. These funds will be administered by the Long Island Development Corporation as a revolving loan fund for defense diversification. New York State, Nassau and Suffolk are now working to leverage the $2 million in EDA funds into a $22 million Working Capital Loan Pool with $20 million coming from local banks.

To encourage Long Island banks to participate, the program would establish a loan loss reserve fund of $3 million. Suffolk has already provided $500,000 in the County's 1994 operating budget as Suffolk's contribution to the fund. There are current efforts to secure $2 million from New York State and $500,000 from Nassau County. The loan loss reserve fund would be used to support the $20 million from the banks, not the $2 million received from EDA.

It has been proposed that various banks provide lines of credit at the prime interest rate to the Long Island Development Corporation on an unsecured basis. The LIDC would then make loans

to individual companies. The lines would subsequently be converted to permanent loans. It is envisioned that twenty-to-forty local banks would participate, with each providing a line of $500,000 to $1 million. As an additional inducement to banks to participate, it is proposed that New York State, Nassau and Suffolk Counties deposit sums of money in each participating bank equivalent to the line of credit pledged by that bank or some lesser amount.

The loans would be primarily for working capital although some funds would be available for fixed assets. At least $2 million of the $20 million pool would be reserved for defense diversification to match the $2 million EDA revolving loan fund. The pool funds are intended for companies that cannot obtain financing from conventional sources or traditional government sources without further support. All loans would be for terms of one to seven years, with a maximum of ten years. Eligible manufacturers would employ 500 or fewer workers.

The availability of air cargo services also has ramifications for economic development. The availability of such services can assure the success of urban development projects such as duty-free foreign trade zones. Air cargo services also help to attract community investment. Therefore, the availability of air cargo services can be a key element in creating jobs.

Separate regional air cargo airports have been suggested as a means of ameliorating existing airport congestion. It has been argued that separate cargo airports would free up airport capacity at major hub airports, including valuable ramp space, and that

separate cargo airports would encourage economic development.

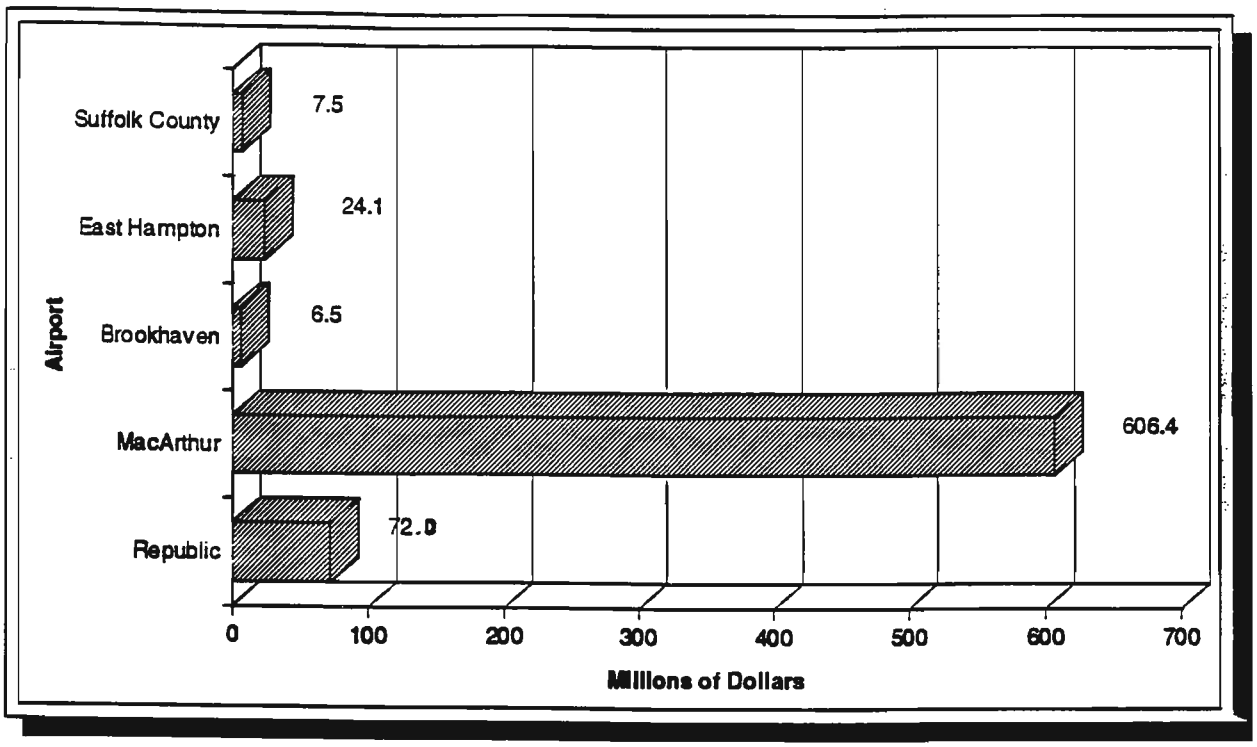
In recent years, there has been growing integration of air cargo transportation with manufacturing and distribution operations. Efficiency is served when all three functions are consolidated at a single location. An air cargo facility can be particularly attractive to aviation-related industries, to industries that utilize just-in-time inventory control systems, and to industries that import or export perishable goods to overseas markets.

Studies for the New York State Department of Transportation show that Long Island's existing airports -- Republic, Long Island MacArthur, Brookhaven, East Hampton and Suffolk County -- have a major impact on the Long Island economy. In 1990, these airports collectively generated $716.5 million in direct and indirect economic benefits. The presence of commercial air cargo facilities at Calverton Airport could also be a major plus for the Long Island economy.

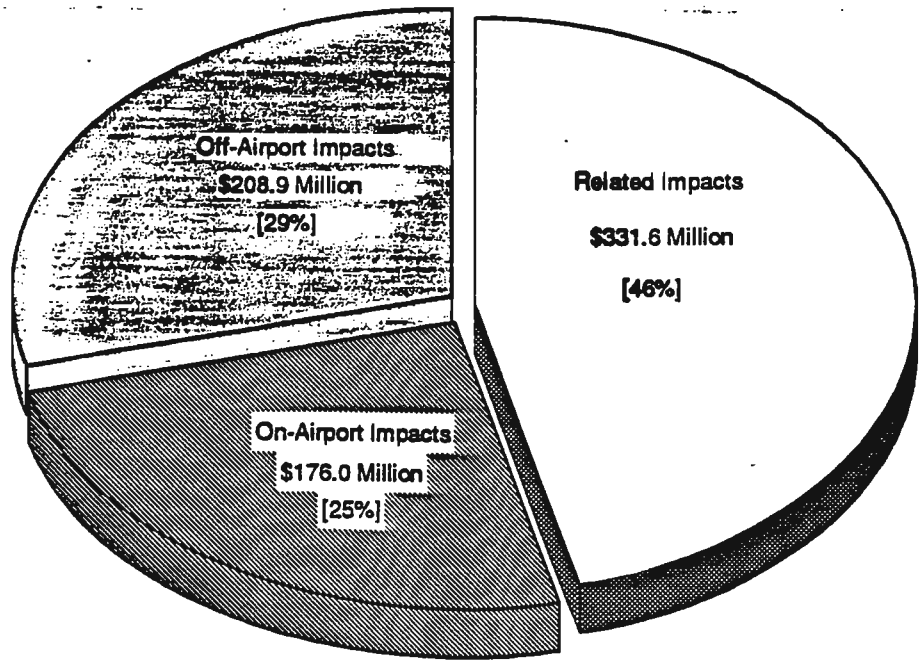
The potential interest of air cargo providers in using facilities at Calverton is a key element in determining whether such a cargo facility would be economically feasible. To assess their interest, questionnaires were mailed to the Presidents or Chief Executive Officers of fifty-five air cargo providers. Twenty-six replied to the questionnaire. This is equivalent to a response rate of 47%. The questionnaire contained two questions. Question 1 asked if the firm would consider using air cargo facilities at Calverton Airport. Question 2 asked what

Graph

The Annual Economic Impact of Long Island's Airports, 1990
($ millions)



Type of Impact



(Total Impact - $716.5 Million)

Source: Wilbur Smith Associates for the New York State Department of Transportation

circumstances would induce them to use air cargo facilities at Calverton. Although most of the responses were negative, ten carriers expressed some potential interest in air cargo facilities at Calverton. They indicated that they might use air cargo facilities at Calverton to serve their customer base on Long Island, particularly if that customer base were to grow. They also expressed an interest in Calverton provided operating costs at Calverton were lower than at Kennedy Airport. Thus, there appeared to be a "modest" level of interest on the part of air cargo providers in using potential air cargo facilities at Calverton Airport.

The relative cost of operations at Calverton Airport would be a key variable in its economic success. Rates and charges at airports depend upon the size of the airport, the rental space and facilities available, the amount of available land for additional construction, the volume of air and ground activity, and the number of enplanements. Table 17 compares rental costs and landing fees for Kennedy Airport and for Long Island's east end satellite airports. It is clear from these statistics that the cost of doing business at the east end airports is much lower than at Kennedy. Operating costs at the east end airports are probably a good proxy for potential operating costs at Calverton Airport.

Table 17
Airport Cost Comparisons, New York Metropolitan Region
Rental Costs and Landing Fees

Airport	Rental Cost Per Square Foot*	Landing Fees Per 1,000 Pounds	Annual Rental Cost***	Cost of Landing a 727****	Cost of 52 Landings Annually	Total Annual Rental and Landing Fees
Kennedy	$40.00	$2.50	$240,000	$375.00	$19,500	$259,500
MacArthur	17.00	0.85	102,000	127.50	6,630	108,630
Republic	25.00	0.30	150,000	45.00	2,340	152,340
Westhampton	4.25	0.70	25,500	105.00	5,460	30,960
Stewart	9.50	0.55	57,000	82.50	4,290	61,290

*Note: Rental costs differ for warehouse, counter, terminal and office space. Since some Long Island airports do not have all types of spaces, one uniform rental rate has been used.
**Represents a flat charge per aircraft
***Based on 6,000 square feet
****With a landing weight of 150,000 pounds

Source: Long Island Regional Planning Board

Three alternative economic development plans for the available acreage within the fence at Calverton Airport were developed. All three scenarios envision a fixed base operator, an airport manager, facilities for sanitary and industrial waste treatment, an integrated carrier, an industrial park specializing in light, high-technology, high value added industries such as instruments, cameras, and pharamaceuticals, and an air cargo facility. In addition, Scenario 1 envisions a foreign trade zone. Scenario 2 envisions an aviation maintenance facility instead of a foreign trade zone. Scenario 3 envisions both a foreign trade zone and an aviation maintenance facility. The development of the project is likely to be uneven and full development could take as many as twenty years. The availability of even modest air cargo operations at Calverton Airport could be the catalyst for developments at the airport that would create more than 12,000 on-

airport jobs at full development and generate annual salaries of $188 million.

In order to determine the indirect or multiplier effects of the foregoing developments, an input-output model of the Long Island Economy was used. The results of this analysis are shown in Table 18. Table 18 indicates that almost 18,000 jobs could be created both at the airport itself and throughout the Long Island economy as a result of the proposed development of Calverton Airport.

Table 18

Economic Impact of Scenarios 1, 2, and 3

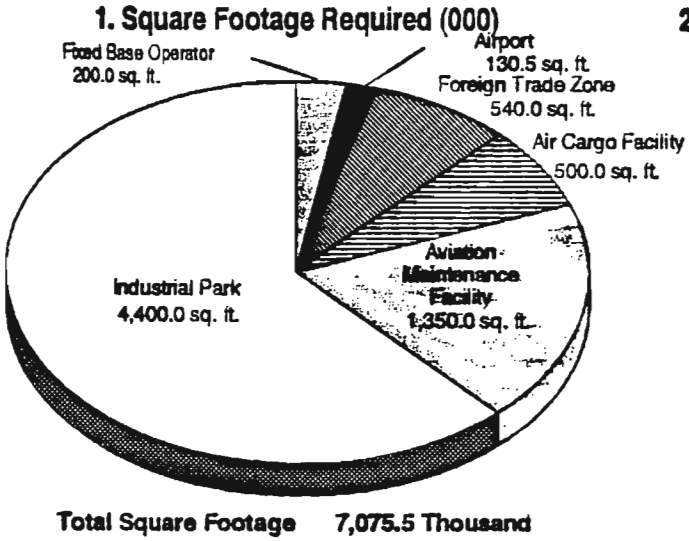
Construction Phase	Scenario 1	Scenario 2	Scenario 3
Square Feet Constructed	5,770,500	6,535,500	7,075,500
Amount Spent	$313,710,570	$355,295,790	$384,653,550
Estimated On-Site Construction Jobs	1,089	1,233	1,335
Overall Impact on Long Island:			
Output	$610,700,366	$691,654,314	$748,805,067
Earnings	$211,378,181	$239,398,303	$259,179,562
Employment (Temporary)	8,313	9,415	10,193
Permanent Phase (Annually)			
Amount Spent (Salaries)	$169,249,600	$172,317,600	$187,969,600
Estimated On-Site Permanent Jobs	11,580	11,105	12,180
Overall Impact on Long Island:			
Output	$340,064,760	$346,229,139	$377,677,920
Earnings	$121,978,186	$124,189,295	$135,469,690
Employment (Indirect)	4,215	4,290	4,680
Total Permanent Employment Created*	15,795	15,395	16,860

*Note: Understates permanent employment because the indirect impact of the purchase of goods and services by potential firms at Calverton Airport has not been included. Only wage and salary expenditures were factored into the model.

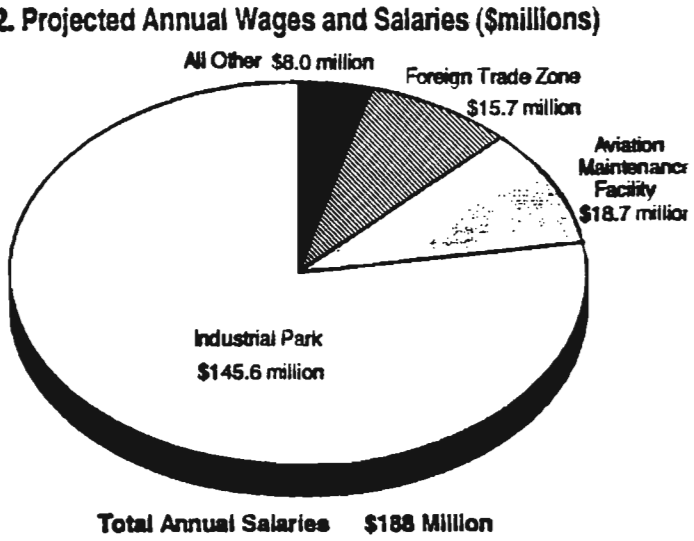
Source: LIRPB based on Long Island RIMS II multipliers, Bureau of Economic Analysis, U.S. Commerce Department

Graph

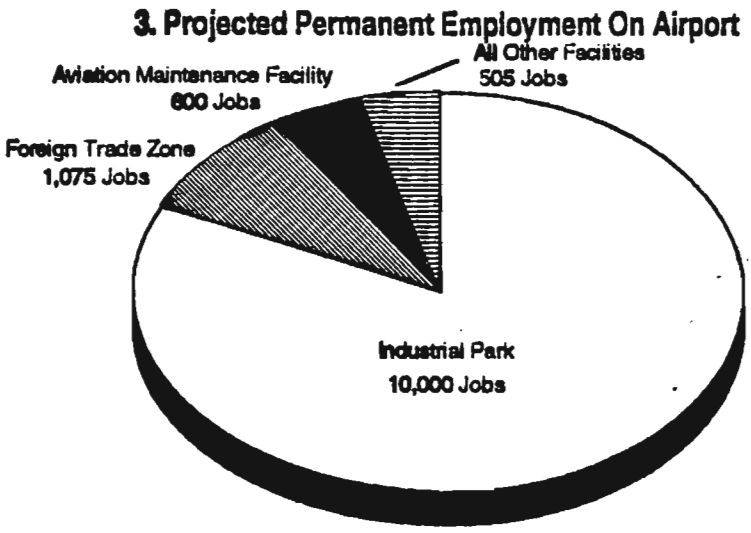
Projected Economic Impact of the Potential Development of Calverton Airport Under Scenario 3



Total Square Footage 7,075.5 Thousand



Total Annual Salaries $188 Million



On Airport Employment At Full Development - 12,180 Jobs

Source: Long Island Regional Planning Board

Tax abatements can be more effectively utilized to promote industrial and business development on Long Island. Suffolk County's proposal to the New York State Legislature to implement a Strategic Industries Incentive Program would provide counties, at their option, with the flexibility and authority to target property tax abatements to strategic industries. It would establish a framework within which New York State counties could work with other local governments such as towns, villages, and school districts to encourage economic development that is consistent with their community master plans and the needs of their residents, businesses and environment.

The proposed legislation represents an improved method of targeting real property tax abatements to foster the growth of industries that are strategically important to the future economic development of various regions of New York State. The proposed legislation would remedy a major defect of the existing 485-b tax abatement program. This program is no longer a useful or efficient economic development tool in many areas of the state. Because of its inflexible structure, which requires taxing jurisdictions to provide the same level of tax abatements for all improvements to commercial property, or none at all, many units of local government on Long Island have rescinded the abatement. The 485-b program does not allow local governments to target their foregone tax revenues to the enterprises that are most important to their local economies.

The proposed legislation allows each county to establish by

local law, an Industrial and Commercial Incentive Board (ICIB) that would have the power to grant property tax exemptions for industrial, commercial, and business development and improvements. The Board would develop and approve standards for the types of entities that would be eligible for an exemption pursuant to this section.

There is also a need to fund New York State's highly-effective Industrial Effectiveness Program at higher levels. The program, created in 1987, is administered by the New York State Department of Economic Development. It provides technical, financial and educational assistance to qualified manufacturing firms and industry groups. During 1993, the program was funded at $2 million statewide. Long Island alone needs $4 million annually to make the program available to all manufacturing firms seeking assistance.

There are also a number of legislative actions that could enhance Long Island's competitive position for business and industry. For example, the temporary New York State Corporate Tax Surcharge, which is added to the temporary MTA corporate tax surcharge of 17%, makes the actual New York State Corporate Franchise Tax 11.9% rather than the 9.0% applicable outside the MTA region. Reduction of the surcharge from 15% to 10% would allow Long Island to become more competitive and would not significantly reduce state revenues.

As part of the new state health insurance law, which became effective on April 1, 1993, Long Island was combined with New York City and Westchester for purposes of establishing demographic and

high cost claim sharing pools. This has imposed higher insurance premiums on Long Island businesses to cover higher insurance costs elsewhere in the region. Therefore, Long Island, which is a distinct labor market, should also be treated as a separate and distinct region for purposes of demographic and high risk cost pools.

It would be particularly helpful to Long Island, which is seeking to attract new high technology and venture capital companies if New York State tax laws were changed to conform with Federal laws to allow more favorable accounting procedures for business net operating losses. The current state law has already resulted in the loss of a significant number of jobs to New Jersey, which has a conforming provision in their tax law.

Long Island is being penalized by the State's gross receipts tax on utilities because the tax is collected based on the price of electricity rather than on the amount of energy used by the consumer. Therefore, Long Island businesses could conceivably use less energy than businesses located elsewhere in the state but nevertheless pay a higher tax to New York State solely because of the high cost of Long Island's electricity. Therefore, the gross receipts tax should be amended by the State Legislature to a tax based on the amount of energy used. This would help Long Island businesses to compete with businesses in other regions that have lower energy rates. Rising workers compensation costs are also a barrier to competitiveness. The impact of soaring workers' compensation costs could be mitigated somwehat by allowing managed

care for workers compensation, by prohibiting double-dipping of benefits, and by eliminating the 13% surcharge imposed for inpatient hospital care.

The foregoing legislative actions would help Long Island industry to become more competitive and would facilitate the defense diversification process.

Recommendations: Education

The high performance work organizations of the future will empower workers operating in teams to make critical decisions regarding complex production problems. This type of organization will replace traditional hierarchies in which instructions flowed from the top down. Control will be decentralized and workers will receive promotions based on skill levels rather than seniority. The emphasis will be on the ability to think creatively and on adaptability. Most businesses will no longer be sheltered from global competition and they will require employees whose skills are consistent with the needs of a globalized economy. These include not only the requisite technical skills but also a knowledge of different cultures, languages, and business practices. In the 1990s, the pace of economic change will accelerate so that existing skills will become obsolete within a shorter time frame.

Long Island's educational institutions will be called upon to respond promptly and effectively to these changes. These institutions perform many diverse functions. Collectively, they

are large employers that contribute significantly to Long Island income and employment. Their research helps to create new products and product markets. Their primary mission, however, is to produce graduates who have the general knowledge and intellectual skills to adapt to societal conditions and labor market needs that currently exist and even to those needs that cannot now be conceived.

Long Island's colleges and universities devote enormous resources toward producing literate, highly-skilled graduates. However, the traditional college-age population, those between ages 18 and 22, is declining and is expected to continue to decline. At the same time, growing numbers of adult labor force participants, many with extensive work experience, will be displaced from their current jobs by on-going changes in the economy. Many will require additional training and/or retraining for future jobs. Moreover, in the volatile economic climate of the 1990s, Long Island businesses and governments will increasingly require the unique expertise available within the university community in order to function effectively. This, in turn implies much closer linkages between industry, government and institutions of higher education on Long Island.

Thus, there is a clear need to redefine the respective missions of Long Island's institutions of higher education. They will be asked to assume new functions and to respond to new demands during the 1990s. In some cases, Long Island's colleges may find it necessary to assume functions once performed solely by

Island's adult population with the skills needed by regional employers. It may be necessary for Long Island universities to specifically recruit faculty members who have this orientation.

• Long Island's colleges could develop a more entrepreneurial approach in interacting with local businesses and government agencies. University-based consulting groups that offer fee-based services could greatly enhance the competitiveness of local businesses and the efficiency of local governments. Joint university-industry research arrangements could also be mutually beneficial. However, as Long Island's colleges and universities embrace these new functions, policies governing faculty tenure may have to be revised and policies governing intellectual property may have to be implemented. In some cases, criteria for tenure may have to be modified to include teaching, research, and community service. University policies governing intellectual property that provide for sharing the proceeds of any invention or innovation with the responsible faculty member or members may be critical in encouraging faculty participation and in developing closer university-industry relationships.

• If Long Island's institutions of higher education are to assume these new functions in support of the regional economy, they must have the financial ability to do so. College budgets have been tight for several years and there is little relief in sight. The growth of fee-based activities is one potential source of funding. However, this will put universities into direct competition with private-sector purveyors of those services and

technical and vocational schools. This, in turn, may entail a radical change in educational philosophy.

• Long Island needs a first-rate public engineering college with a diverse array of advanced graduate programs. Continued emphasis on science, engineering and technology is needed in a region that aspires to compete by commercially exploiting state-of-the-art technologies. Long Island's engineering schools should share their technical expertise with Long Island businesses. In this vein, SUNY Stony Brook's College of Engineering and Applied Sciences is launching a Center for Advanced Manufacturing that will provide facilities for industry/university efforts to improve manufacturing operations, perform outreach and technology transfer to serve local industry, offer professional education to serve the local economy and that of the state, and provide a source of intellectual strength in advanced manufacturing technologies.

• Experience has shown that concentrations of high-technology industry have grown up and taken root in those areas that possess key "infrastructure" components. These include major research universities and laboratory facilities and a well-trained labor force. This suggests the need to retain diversity in higher education on Long Island.

• An "ivory tower" mentality that denigrates practical hands-on training could be a major obstacle in utilizing the intellectual resources of Long Island's universities to further regional economic development. What is required is a pragmatic approach that will effectively equip large segments of Long

could generate a backlash designed to curb such activities. What is needed is a state fund dedicated to university-oriented initiatives and projects. All of the state's colleges could then compete against each other for awards from this fund based on the merits of their projects.

If such a fund is to become a reality, state policymakers must recognize the keen importance of the state's institutions of higher education in the structural transformation of the New York State economy during the 1990s. The general public must also become attuned to the critical importance of the state's colleges and universities to future economic growth. Public support is particularly necessary because it is likely that any such educational fund would be financed through the issuance of state bonds following a public referendum.

One option would be to have the University of the State of New York, which regulates higher education in New York State, administer the fund. Although it could be administered on a statewide basis, the unique educational needs of each of the state's regions must be taken into account and each region must be assured of an equitable share of overall funding.

• At present, a student residing on Long Island can attend a community college elsewhere in the state, regardless of whether the student's home county offers a similar program. However, the student's home county is billed for an amount equal to the contribution made by the student's host county to its own community college. This system poses a significant drain on

county resources. The law should be changed so that in this situation, the student would be responsible for both the direct tuition and the indirect subsidy. Eliminating the "charge back" among community colleges in different counties might limit student choices somewhat. However, the risk that some students would be deprived of an opportunity to attend college appears to be small.

• Long Island's community colleges might find it useful to utilize the resources of the state university system in recruiting faculty. Opportunities for sharing faculty, laboratory facilities, and library facilities should also be investigated. Sharing would maximize the use of unique and expensive equipment such as computer-aided design equipment.

• Long Island's colleges should define as precisely as possible what an educated person should know. They should also institute proficiency requirements in subjects such as writing, math, and foreign languages. This would help to make colleges more accountable for educating their students and would help to prove that students are actually being educated. The return to "value added" testing is a national phenomenon and should be adopted on Long Island.

• Attempts to directly measure the productivity of college faculty should also be made. Such attempts are already being made elsewhere. For example, the University of Connecticut has devised a system whereby each academic department will be scored on a scale of zero through five in each of ten categories including research productivity, service to the State of Connecticut,

national reputation, undergraduate teaching, and graduate teaching. Progress in each of these categories would be measured over several years against goals set by the faculty itself. Progress toward these goals would be taken into account in budgetary decisions. The system is not perfect. For example, the scores cannot be used to compare one department with another because funding opportunities for research vary greatly by subject area. There is also the possibility that the system will be subverted to emphasize quantity over quality. However, given today's limited university resources, institutions of higher education must be sure that their resources are being spent in a cost-effective manner. Hence the need to hold faculty accountable for the hours they work and the research, teaching, and service they perform.

• There is an urgent need to maintain a balance between public and private institutions of higher education on Long Island. During a time of economic retrenchment, the lower tuition charged by the state's public colleges becomes even more attractive. This siphons students from Long Island's private colleges and universities and in some cases poses a threat to their very existence. State "Bundy" funds were made available to private colleges in part to compensate them for the effects of the continued expansion of the state university system. Bundy funds have been cut substantially in recent years and the fiscal realities are such that it may take some time for Bundy funding to be restored. Therefore, other mechanisms designed to maintain the

viability of Long Island's system of private colleges should be investigated.

During the 1960s, 1970s, and 1980s, Long Island's colleges expanded their programs significantly to meet the needs of the growing college-age population. Some retrenchment is likely during the 1990s. It is important that the balance between public and private higher education be maintained during the process of retrenchment.

• Long Island's colleges and universities should work with the business community to develop opportunities for internships and other "real life" learning experiences for their undergraduate and graduate students. Such programs are a valuable source of talent for the sponsors as well as an investment in the future.

• Colleges and universities should continue reshaping the school day and the school year in order to help companies respond to the unremitting pressure for skills improvement in the existing workforce. Formats should become more versatile and should include evening and weekend programs and intensive short courses. More non-resident programs, at company sites, should also be available.

• The enhancements planned and implemented for Long Island's telecommunications infrastructure will give Long Island an opportunity to reshape the educational classroom. The planned high-speed fiber-optic network along with video and other high-technology components can support extraordinary improvements in long-distance learning. Individual college campuses will have the

opportunity to develop specific programs designed to address underserved needs. Employees of Long Island businesses will enjoy much greater access to educational programming.

Long Island's colleges and universities are an invaluable resource. The jobs of the 1990s will increasingly require the types of skills that are best learned in a university setting. In addition, Long Island's businesses will need the unique intellectual resources available within local colleges and universities to remain competitive during the 1990s. This suggests that Long Island's institutions of higher education will play a critical role in the structural transformation of the Long Island economy during the 1990s.

Long Island's secondary schools also have a vital role to play in promoting economic development. There should be greater emphasis on excellence in education at the high school level. The proposed "magnet" high school to be associated with SUNY, Stony Brook would help to promote excellence in education. It would be modeled after Stuyvesant High School in New York City, which admits students through a written examination. The school would function as a "magnet" for top students and Stony Brook would then be able to recruit these students for college admission. Too often, however, students who choose not to pursue a college degree have been ignored. As a result, they generally lack the skills for the jobs that will become available in the 1990s and beyond.

Long Island's secondary schools can and should do more to help youths make the transition from school to workplace.

Apprenticeship programs, currently widely used in European countries, are one vehicle for doing this. Such programs, which would lead to technical and professional certificates, would equip those who do not seek a college degree with entry level skills for specific occupations.

Under one proposed model, the apprentice would make a four-year commitment to a trade and an employer. The apprenticeship period would span the last two years of high school and the following two years. The student's in-school learning would be geared to developing skills for a specific trade. A recent report by the Work in America Institute, "Meeting the Challenge of Change", strongly supports such programs. It notes that adults learn best when lessons are linked to their workplace and that "contextual" learning is more cost-effective than broad remedial education.

This country's competitors in Europe and Japan currently spend two-to-three times as much as the United States on worker training. Moreover, most worker training in the United States is geared to managers and professionals. Less than 10% reaches front-line blue-collar and clerical workers. Apprenticeship training will help blue-collar and technical support workers better adapt to workplaces permeated by advanced technologies. This, in turn, will make higher productivity forms of work organization possible.

The implementation of youth apprenticeship programs on Long Island requires that Long Island schools come to view vocational education as worthwhile and that they impart this view to their

students. It also requires that local companies come to view workers as an investment rather than as an expense. Long Island's employers must also subscribe to a philosophy of lifelong learning for their workforce, including their blue-collar and technical workers.

During the 1980s, the earnings gap between high school and college graduates widened by 16% for men and by 12% for women. Wages shifted in favor of the educated because technological change made the skills of educated workers more valuable relative to the skills of less educated workers. In effect, technology gave a boost to those who already had an advantage in the job market. Youth apprenticeship programs can help non-college bound young people develop marketable skills. This, in turn, will help bridge the growing economic gulf between the "haves" and "have nots", halt the growth of the unskilled labor force, and give non-college graduates increased social mobility.

Recommendations: Dependent Care

There is an urgent need for quality dependent care on Long Island. Individual firms and/or consortiums of firms should actively work to implement center-based care when feasible. Useful models for such care include the Village Green Day Care Center, Inc. in the Village of Huntington, the European-American Bank facility at EAB Plaza in Uniondale, the Brookhaven National Laboratory Child Development Center, the Hofstra University Day Care facility, the Computer Associates Child Development Center and

the CMP Publications facility in Manhasset.

Local governments can play a vital role in expanding center-based dependent care on Long Island. For example, tax incentives can be used to encourage developers to incorporate such facilities in their buildings. Property tax abatements could be given to existing offices and industrial buildings that make renovations to incorporate dependent care facilities. Another option is to allow builders extra feet of commercial or industrial space beyond current zoning limits for each square foot that is set aside for a dependent care facility. Although new commercial/industrial construction is currently on hold, this will change as the Long Island economy rebounds.

Another option is to utilize existing Head Start program sites for day care. This would eliminate most start-up costs.

Greater attention must also be paid to the affordability of child care. The average annual price currently being paid per child is about $3,000. The estimated price range for a high quality child care center is between $6,400 and $8,400 per child. It may be necessary to develop private and public scholarships to help parents pay for such care.

Family day care is an alternative to center-based care, particularly when potential users want to set down support systems within their own communities. Such care is particularly appropriate when more than one child in a family requires care. There are two kinds of family day care homes. A family day care provider cares for six or fewer children in his or her home. A

group family day care provider usually cares for twelve or fewer children at home.

Family day care may be a desirable option for both the company and the individual user. From the company perspective, relatively modest financial support is needed to expand family day care and group family day care homes. For the user, family day care may be more flexible than on-site, center-based care. That is, users can generally negotiate the specific hours for which care is needed and even the cost of such care.

Long Island employers can promote family day care by supporting those organizations that are charged with developing family day care facilities and family day care networks within the community. Family day care networks are particularly important because they further the professional development of family day care providers. On Long Island, the organizations that support family day care are the Day Care Council of Nassau County and the Child Care Council of Suffolk. Both agencies support the training of child care providers and link parents to family child care through appropriate referrals.

Employers can also implement "family responsive" policies that make it easier for their workforce to arrange for dependent care. Family-responsive policies include financial subsidies for dependent care services, a dependent care assistance plan (DCAP), and a flexible benefits program. The 1981 Economic Recovery Act authorized child care allowances as a tax free fringe benefit through a Dependent Care Assistance Program (DCAP). The DCAP

allowance may cover any dependent care expenses that an employee incurs while working. It can cover care for a child under age 13, a disabled spouse, or any qualified dependent including parents and grandparents. It may cover the cost of care in any licensed day care center, family day care home, before or after school program, vacation program, summer day camp, or in the employee's own home.

The employer must have a written plan to ensure that DCAP allowances are non-discriminatory both in terms of eligibility and benefits. Up to $5,000 contributed to a DCAP may be excluded from income. Because this amount is not considered part of an employee's salary, it is free of Federal income and social security taxes. For employers, the benefits paid are tax deductible as a business expense and are not subject to payroll taxes. In addition, the employer saves unemployment insurance costs, disability costs, and workers compensation contributions on the employee's non-taxable salary. The DCAP allowance may be underwritten by the employer as an add-on over and above the employee's current pay and benefits.

Other family responsive policies include more flexible work schedules and family leaves. The recently-passed Federal family leave bill, which gives workers in establishments employing at least fifty workers up to twelve weeks of unpaid leave in the event of family emergencies, will ease the dependent care burdens of many families.

New York State's role should also be broadened. State

agencies should be able to award planning grants to consortium applicants. State regulations regarding financial aid for day care centers should also be more flexible so as to allow a broader range of business sponsors. New York State should also consider establishing a child care loan guarantee fund. Four states -- Maryland, Arkansas, Tennessee, and Washington -- have already done so. These states guarantee private-sector loans made to day care providers. States deposit given sums into an account which is then used as collateral for private loans made to providers. The loan guarantee approach is better than a direct loan fund because it allows the money to be leveraged to a greater extent. For example, $100,000 deposited in a loan guarantee fund can guarantee $500,000 in loans. On the other hand, a direct loan of $100,000 generates only $100,000 in capital. The interest earned by the fund pays for any loan defaults.

The Long Island business community can support dependent care in several ways. The lack of access to credit is a major obstacle to the expansion of such care on Long Island. Dependent care providers need financing for renovation and expansion and lines of credit for day-to-day operations. However, lenders are often reluctant to make loans to dependent care providers and often impose heavy collateral requirements when they do make such loans. The Community Reinvestment Act of 1977 obligates lenders to equitably satisfy the credit needs of their communities. This includes the needs of dependent care providers. A closer partnership between the Long Island financial community and Long

Island child care providers is needed. Those who operate and staff dependent care facilities generally have a background in social services and not in finance. Providers must learn to develop business plans that satisfy the banking community. On the other hand, banks must come to regard the provision of dependent care services as a business and not simply as "babysitting".

Recommendations: Tourism

The growing competitiveness of the hospitality industry means that Long Island's hotels and motels must adopt innovative marketing strategies and higher standards of service if they are to retain and expand their market share. It has also become necessary to market the hospitality industry beyond Long Island and its immediate environs, a costly departure from past practices.

Hotel room taxes specifically dedicated to the promotion of tourism can produce the revenues needed for such a campaign. Suffolk County recently enacted a 0.75% hotel-motel tax and a similar tax has been proposed for Nassau County. Nassau County should implement such a tax. In Suffolk, the tax is added to the daily rate charged by hotels, motels, campgrounds and bed-and-breakfast establishments. Based on current occupancy patterns, the Suffolk tax could generate as much as $900,000 annually. Two-thirds of the proceeds are earmarked for the Long Island Convention and Visitors Bureau. Approximately 21% of the receipts will be used to maintain historical structures and natural areas operated by the county. The remaining 12.3% will go to not-for-

profit museums and cultural organizations designated by the Suffolk County Legislature.

Hotel room fees were first imposed to fund convention and visitors bureaus. Their uses were later expanded to cover the costs of operating local convention centers. However, in recent years, some legislative bodies have used receipts from hotel occupancy taxes to fund general obligations. In effect, the occupancy tax became an alternative to raising other local taxes. This has stiffened resistance to hotel room fees on the part of the travel industry. Suffolk's new hotel-motel tax avoids this pitfall. It is being entirely used to support tourism or tourism-related activities.

Until recently, hotel-motel fees were considered economically neutral because they are generally borne by non-residents. However, recent empirical evidence suggests that although hotel room fees can generate substantial revenue, they can also have negative consequences for the hospitality industry. That is, such fees can reduce the demand for hotel rooms depending on the price elasticity of demand for hotel rooms relative to the price elasticity of supply. The concept of price elasticity operates as follows: If a firm raises the price of a good or service that it produces or sells, its customers generally respond by purchasing a smaller amount. The elasticity of demand is the percentage drop in the quantity sold for every percentage increase in price. Several studies have found that the price elasticity of demand for lodging services is approximately -1.0. This means

that for every 5% increase in room rates, the demand for lodging services will decline by an equal percentage, 5%.

This finding has serious implications for the use of hotel-motel fees on Long Island. New York State currently levies a hotel occupancy tax of 5% on hotel rooms costing more than $100 nightly. This is in addition to the current local sales tax of 8 1/2%. When Suffolk's new tax of 0.75% is added, the total tax on some Suffolk hotel rooms is 14.25%. Active, effective tourism promotion efforts can go a long way toward mitigating the impact of so high a tax. Long Island's hospitality industry would also be helped immeasurably if the 5% state tax on rooms costing more than $100 were revoked or if a portion of the tax was returned to Long Island for tourism promotion. A rebate of the tax would help Long Island tourism officials compete effectively with other tourist regions that are currently raiding the tri-state area for tourist business. Revocation of the tax entirely would give Long Island officials greater leeway in levying local hotel-motel fees.

The need to market Long Island's tourist attractions more broadly is only one aspect of the solution. There is also a need to provide the types of attractions that recreational and business travelers want. The following suggestions are made in this vein:

• There is overwhelming interest in shopping as a recreational pastime. Long Island has a large and diverse retail sector. Reading, Pennsylvania, Flemington, New Jersey, Freeport and Kittery, Maine and North Conway, New Hampshire have built an industry around bargain hunters who flock to their factory

outlets. Long Island can market its factory outlets, flea markets, and discount malls -- in Bellport and Riverhead -- just as effectively. Brochures listing these outlets, their hours of operation, and travel directions would be a useful first step.

• There is already substantial interest in Long Island's vineyards. Long Island's grape growers are attempting to encourage a regional identity for the North Fork as a major wine-producing area. Organized wine-tasting tours and other "happenings" centered around the vineyards would enhance tourism and solidify Long Island's identity as a major wine-producing area. They would also boost multiseason tourism because fall is the most popular season for trips to the vineyards.

• The U.S. is a nation of sports fans. Long Island can capitalize on the interest in sports such as tennis and golf by specifying designated months as "tennis month" or "golf month". During these months, world champion players would be invited to play in local tournaments. If these tournaments were televised nationally, Long Island's image as a desirable travel destination would be substantially enhanced. Complementary activities might include tennis and golf "clinics" given by local colleges.

• Long Island can use its harbors and docks to greater advantage. One or more of Long Island's harbors could be transformed into a seaport of the colonial period, akin to Mystic Seaport in Connecticut. Happenings centered around the harbors could include "op sail" events. Complementary activities would include water and boat shows, boat races around Long Island, clam

bakes, fireworks displays, and short college courses that teach boating skills.

° Long Island was a cradle of aviation. Its contributions to the field of aviation could be celebrated with "open skies" events complete with air shows, sky writing and flyovers by antique planes.

° County fairs complete with country music, food booths, games and animal displays could be expected to draw large numbers of visitors.

° Long Island possesses a storehouse of scientific talent in its businesses, colleges and universities, and laboratories. What better way to display this talent and to attract visitors than to host science fairs. There could be complementary lectures by recognized scientists from Long Island and elsewhere. Such fairs would enhance Long Island's image as a center for high technology and would stimulate interest in scientific careers among young people.

° Long Island can better utilize its performing arts facilities. It could sponsor a summer festival of the arts and engage world renowned orchestras to play in its concert halls. Complementary activities might include simultaneous art displays at docks in Cold Spring Harbor, Northport, Greenport, Long Beach, Jones Beach, Southampton and Montauk and expanded summer stock offerings. The annual Suffolk County Film and Video Festival would be another element.

° Long Island's historical attractions lend themselves to

group or self-guided tours. Visitor interest in historical events would be further stimulated by designated "history months" during which open houses at Long Island's historical homes and churches would be hosted by persons in period costumes. Complementary activities could include craft displays and re-enactments of specific historical events, parades, and lectures at local colleges and universities.

• There is considerable interest in seasonal events such as apple picking or fall foliage tours. Long Island's hotels, motels, and resorts could sponsor fall foliage "getaway" weekends during which significant discounts on hotel rooms, car rentals, and selected recreational activities would be offered.

• Efforts should be made to promote Long Island's off-season attractions. Warm weather sports such as golf, tennis, volleyball, basketball and swimming can be adapted to indoor facilities on Long Island. Long Island's private health clubs provide indoor tracks, rowing machines, treadmills and cross-country ski simulators. There are also indoor batting ranges and indoor facilities for soccer, deck hockey, softball and lacrosse.

• Self-improvement vacations are another promising area. The population of the northeast and of the New York Metropolitan Region is characterized by relatively high educational levels. Therefore, adult education courses in a leisure setting should be popular.

The foregoing suggestions are designed to generate a sense of excitement and to create an awareness of Long Island as a total

vacation experience and a year-round travel destination. Long Island's travel industry should also consider expanding the menu of choices it offers to visitors. Additional attractions for children should be considered. The recently-opened water theme park, Splish Splash at Adventureland located near Exit 72 on the Long Island Expressway, is a welcome addition. Both Islip and Riverhead have proposed developing an aquarium. This type of facility would help to promote multi-seasonal tourism on Long Island.

Highway congestion and parking problems can be a powerful deterrent to tourism. Additional public transit is needed specifically to serve business visitors and leisure travelers. This is particularly necessary if Long Island wants to attract some of the larger business conventions. A "convention loop" jitney linking major business hotels and convention centers is one possible solution. Better public transportation to and within areas dominated by leisure travel is also needed. Antique trolleys on wheels could circulate through areas such as Port Jefferson and Sag Harbor. They could be available free of charge or at nominal cost and allow passengers unlimited opportunities to get on and off. The trolleys could originate and terminate at park and drive lots located on the outskirts of these areas. The existence of such a service would allow officials to ban or limit traffic in the downtowns of Long Island's tourist-oriented villages during the peak summer season. Greater utilization of the Long Island Railroad for leisure trips to the east end and a better interface

between the Long Island Railroad and surface public transportation on the east end is also needed.

Owners and employees of travel-related businesses should also be educated concerning the importance of treating travelers with courtesy. These hospitality training seminars would be useful in acquainting both the industry and the public with the value of tourism as an economic development tool. It is also important to provide a well-trained labor force for the travel-related industries. With population growth slowing and the Long Island population aging, fewer young workers will be available. The travel-related industries will be especially hard hit because young workers constitute a large segment of their labor force. To provide the necessary labor force, Long Island's institutions of higher education could develop more extensive travel and tourism curricula. The community colleges are a particularly good vehicle for such types of studies. It is important that today's college students and those seeking to change careers regard tourism as a viable career option and that they be professionally trained to work in the industry. To further this goal, additional funding and grants should be made available to those institutions that develop accredited tourism programs.

Mechanisms are also needed to allow the hospitality and tourism industry to respond promptly to the changing travel market. Suggestion boxes placed throughout tourist areas can help keep tabs on the changing requirements of leisure and business travelers and can alert the industry to visitor complaints and

problems.

Effective mechanisms for coordinating various tourism programs, attractions, and activities are also needed. The Long Island Tourism and Convention Commission is Long Island's official tourism promotion agency. Its work would be enhanced by expanding its current cooperative programs with local chambers of commerce. The Tourism and Convention Commission will be better able to serve the industry if it can respond to the concerns of the full range of travel-related businesses including Long Island's hotels, airlines, and travel agencies.

Long Island's success in attracting leisure and business travelers will also depend on its ability to market its products and services effectively. The travel market is becoming more segmented. This means that future promotional efforts must be narrowly targeted to specific groups of visitors. Foreign visitors are a growing market. According to the U.S. Commerce Department, there will be a 75% increase in foreign travel to the U.S. by the end of the 1990s. Foreign travelers should be educated to view Long Island as a desirable travel destination, separate and distinct from New York City. A successful marketing campaign oriented to foreign travelers involves developing and distributing foreign language brochures describing Long Island's unique tourist attractions, training employees in the travel-related industries in one or more foreign languages and in the culture of foreign visitors, conducting periodic familiarization tours for foreign-based meeting planners, travel agents, and tour

operators, placing ads in foreign trade magazines, and developing cooperative advertising campaigns with overseas airlines.

The relatively affluent older population is another obvious target as are young families with children. Older travelers seek low rates, safe accommodations, and a wide range of cultural activities. Young families generally seek inexpensive travel bargains. Promotions that offer special hotel/motel rates, that allow children to stay free of charge in their parent's room, and that offer discounts at children's attractions and fast food restaurants are likely to attract this type of visitor.

Affluent career-oriented singles and working couples are another distinguishable market element. They face stringent time pressures and generally seek high quality services that are reliably delivered and hassle free. "Full-service" two and three-day weekend getaway packages featuring gourmet meals, the services of the hotel's health club, and nightly entertainment would appeal to this group of travelers.

Long Island's hotels might also take a page from the airlines and offer frequent guest programs. These consist of recognition or awards programs. Recognition programs treat regular guests to small gifts and handwritten thank you notes. Awards programs allow guests to accrue free nights and other discounts.

Long Island's primary travel market remains the New York Region and its environs. However, Long Island's travel industry cannot ignore the broader tourism market. Visitors who travel longer distances are likely to remain on Long Island for longer

periods of time and this, in turn, entails higher expenditures.

It is possible to effectively market Long Island as a travel destination and at the same time hold down promotional costs by working more closely with the New York State Department of Economic Development and other tourism promotion agencies in developing cooperative promotional campaigns. The Long Island Tourism and Convention Commission can also work cooperatively with the New York City Convention and Visitors Bureau to develop materials that jointly promote Long Island and New York City attractions. Joint promotional programs with the Port Authority of New York and New Jersey and the New York State Association of Convention and Visitors Bureaus are also possible.

The growth of tourism and business travel during the 1990s can help to take up some of the slack caused by the downsizing of Long Island's defense sector and the general structural transformation of the Long Island economy. It can be a major source of employment growth during the 1990s.

Recommendations: Energy Use and Conservation

Long Island should promote energy conservation of all fuels. There should be support for Public Service Commission initiatives to conserve gas as well as electricity. Any legislation that broadens the authority of the Public Service Commission to include conservation of oil should also be supported.

A Conservation Facilitator should be appointed to promote

conservation and to assure that Long Island fully utilizes State and Federal funding for conservation.

An energy audit should be required before any home can be sold. The audit results should include a prescription for any corrective action needed to achieve conservation.

Conservation measures in county and town buildings should be implemented as examples of energy-efficient construction and maintenance. Development of energy-efficient housing should also be stressed.

Cogeneration projects should be encouraged through legislation favorable to independent power producers. Such legislation should assure a "level playing field" for independent power producers vis-a-vis the New York Power Authority.

Energy conservation programs should be decoupled from electricity rates. Rate increases stemming from conservation should be allocated to the customers or class of customers that benefits from conservation.

It is necessary to improve the opportunities for weatherization of low-income homes on Long Island. There should be a major effort to replace current HEAP eligibility standards with HUD Section 8 eligibility rules in deciding who qualifies for weatherization assistance. The Section 8 rules take into account the local cost of living. In an affluent area such as Long Island, it is possible to have an income that is higher than the current HEAP standard and still be poor. Therefore, the current HEAP standards, which do not take into account the local cost of living,

shortchange Long Island in terms of weatherization funding for low-income households. The New York State Department of Social Services should also alter its income eligibility standards to reflect the local cost of living. It is also important to take steps through the Public Service Commission to prevent any increase in the utility rates of low-income energy customers because of energy conservation programs. It would also be useful to legalize, upgrade and monitor accessory apartments so that the low-income occupants of such apartments can qualify for New York State energy assistance.

In order to assure an increased supply of natural gas, the Iroquois pipeline as well as any upgrades to the pipeline should be supported. Other natural gas pipelines to Long Island should also be encouraged. The New York State Energy Research and Development Authority should sponsor a study of the feasibility, economics, safety, and environmental effects of an LNG terminal on Long Island. In addition, the New York State Department of Environmental Conservation should publish its regulations implementing 1976 legislation of LNG plant siting.

It is essential to bring more hydroelectric power to Long Island. As part of this process, the New York State Energy Research and Development Authority should be asked to sponsor a study of how imports of Quebec hydropower to Long Island can be increased. The study should investigate the possibility of connections through the New England Power Pool.

In order to reduce oil consumption on Long Island, employers

should be helped to establish company commuter programs. Such programs would help employees set up car and van pools and coordinate work hours among companies. The establishment of a fourth lane on the Long Island Expressway as a high occupancy lane for car and van pools and buses would also help to conserve oil as would enforcement of the 55 mph speed limit. More telecommuting should be encouraged. The use of compressed natural gas as a motor fuel for fleet vehicles should also be encouraged.

Recommendations: Industrial Land Use

Although economic growth has slowed, there continues to be new industrial activity. Slow growth continues in Ronkonkoma and Yaphank and in other parts of the Towns of Islip and Brookhaven. In Nassau County, Hicksville and Port Washington have shown some activity. In the future, approximately 100 to 150 acres per year will be needed for industrial development. Suffolk County alone has enough available industrial land to accommodate this rate of growth for more than a century. Clearly, Suffolk County, with over 16,000 acres of available industrially zoned land, is overzoned for industry and only the most suitable sites should be developed. With so much available land, development in environmentally sensitive areas can be curtailed.

Road access should be improved to provide safer and more efficient access to industrial areas. The Long Island Expressway (LIE) is Long Island's industrial life line and should be upgraded to handle the heavy volume of commuter traffic and truck traffic.

There is a need for continuous service roads from Exit 63 to Exit 68 (William Floyd Parkway). This would serve the emerging industrial center along Horse Block Road and the County Center, both in Yaphank, as well as industry, a proposed regional shopping center, and Brookhaven National Laboratory, all at Exit 68. Also needed is an entrance and exit ramp at Exit 65 (Horse Block Road) to give truck and local car traffic better access to Horse Block Road.

The Hauppauge industrial area stretches from LIE Exit 54 to Exit 56. Hauppauge has more acreage devoted to industry than any other community on Long Island. To better serve this industrial area, it would be useful to widen the Motor Parkway overpass at Exit 55, Route 111 from Motor Parkway to Nesconset Highway, and Motor Parkway from LIE Exit 55 to Exit 57.

Excess industrial space on Long Island should be recycled before adding more industrial space. Until a significant volume of vacant space is absorbed, the Industrial Development Agencies should carefully evaluate loan applications for proposed new industrial projects.

Since Long Island is over-zoned for industry, Long Island towns should avail themselves of the opportunity to remove thousands of acres from industrial zoning. However, Long Island still contains a number of prime sites for industrial development as part of Planned Unit Developments (PUDs). These include the now closed Roosevelt Raceway and the 212-acre Grumman Bethpage Airport in Nassau.

In Suffolk County, there are several opportunities for PUDs. The Gyrodyne property in Stony Brook has 182 vacant acres. There are also 500 vacant acres just north of Nesconset Highway in East Setauket which has been proposed as a PUD. There is also a reuse potential for the now closed 145 acre Parr Meadows Racetrack in Yaphank. Its location next to a proposed regional shopping center and the Long Island Expressway make this a good PUD site.

Residentially zoned areas that are totally surrounded by industrial land, as in Melville, should be rezoned industrial to avoid land use conflicts. Industrially zoned land which contains housing in sound condition should be changed to residential zoning to avoid industrial and commercial intrusions into the neighborhood. Industrial zones along the waterfront should be considered for a change to a marine commercial category. Frequently, the original intended uses of the industrial category, such as oil tanks and ship building, have become obsolete. Waterfront land has become too valuable for such uses and would be better utilized for water-dependent activities. The Villages of Patchogue, Port Jefferson, and Freeport could make use of such a district. The Town of Hempstead should consider this type of district for Inwood and Oceanside.

Planning and zoning are tools that guide development in an orderly and efficient manner. Through these tools, industrial development can be encouraged.

Recommendations: Commercial Activity-Retailing

Many innovative retail developments that have been used in other parts of the country should be considered for Long Island. These include themed retail centers and mixed use centers that include a retail segment. These new innovations may be introduced through new retail construction, or through redevelopment of existing Long Island retail centers.

Themed retail centers emphasize a specific product. This provides the consumer with a one stop shopping opportunity. With one stop shopping, fewer trips are generated, thus alleviating traffic congestion and conserving gasoline. A fashion mall is an example of such a themed center. A fashion mall is a concentration of apparel shops, boutiques, and custom quality stores carrying special merchandise. Such a mall is designed with distinctive architectural features aimed at the high-end retail consumer. An automotive center is also a specialty center. Such a planned center would consist of new and used car dealers, automobile maintenance facilities, auto accessories shops and car rental outlets. "Off-price centers" are centers whose anchor stores are discount merchandisers such as Toys R Us or Marshalls. Centers specializing in factory outlets are also off-price centers. These centers have few frills and appeal to consumers who want good quality at a reasonable price.

A hypermarket, a specialty center under one roof, is another retail innovation. This is a very large supermarket which sells the normal array of food items but with a much larger selection. The hypermarket also includes a drug store, bakery , delicatessen,

florist, prepared foods to go, film processing, video rentals and a bank or automatic teller machine. When this type of store is included in a community shopping center, it tends to draw the vitality from the other tenants in the shopping center. Preferably, a hypermarket should be sited alone, but if it is not, other tenants in the center should not duplicate the services offered in the hypermarket.

Mixed uses can be in almost any configuration that provides convenience to the consumer. For example, areas zoned for industrial use or office building complexes can incorporate retail establishments that serve the needs of the area's workers. Retail services within an employment area should provide the services and restaurant facilities that might be found in a neighborhood shopping center. Placement of such establishments within walking distance of employment should be encouraged.

The combination of a hotel facility with a shopping mall provides entertainment for hotel guests and shoppers for the mall. An extension of the hotel/retail partnership is the tourism center. Such a center would include a performing arts center, convention center, field house, skating rinks, and several ancillary retail facilities. Tourists and convention attendees desire good quality hotel rooms, specialty shops, and high quality restaurants nearby. The success of such a center requires the proper mix of facilities that complement each other.

The continued population growth of Suffolk County, specifically in the five eastern towns and Brookhaven Town, may

require a maximum of three additional community and neighborhood retail developments. The areas that are underserved offer planners the opportunity to designate the areas that are the best choices for retail development, that will have the smallest impact on traffic, will avoid overlapping of service areas, and will be located in areas closest to the highest residential densities. A regional mall in Yaphank is now a viable project. It is twelve miles from the nearest regional mall, it has its own service area and fills a need for that type of retail activity.

Nassau County, with its affluent population, can support additional high quality retail square footage. However, there is no general need for additional retail space in Nassau County. This does not preclude the construction of new retail facilities if existing retail space is recycled into alternate uses such as offices.

Long Island municipalities should consider incentives that encourage the reuse of vacant, abandoned, or underutilized retail space, especially when market conditions favor this practice. This process will help to avoid retail blight. For example, some retail sites should be considered for redevelopment to higher density housing. There are many opportunities within Central Business Districts (CBDs) for such redevelopment.

Much of the strip commercial development on Long Island is unsightly. Contiguous strip commercial development should proceed in accordance with a cohesive plan. The plan should include sufficient off-street parking, limited ingress and egress to and

from the roadway, coordinated storefronts and signage, curb cuts, and adequate buffers from nearby residences.

Retail developments along major roadways have exacerbated traffic congestion. When existing commercial properties are redeveloped, all unnecessary driveways and distracting signage should be eliminated and all roadway entrances should have unobstructed views to assure safe merging into traffic. Access to public transportation should be stressed during development and redevelopment.

Recommendations: Commercial Activity-Offices, Hotels

Several innovations are occurring within Long Island's office market. Some shopping centers are being recycled for office use and this process is likely to continue. For example, neighborhood shopping centers lend themselves to medical office reuse. A second major trend is the conversion of offices to condominium ownership. Office buildings are also being incorporated into planned unit developments. It is strongly recommended that affordable housing also be incorporated into such planned unit developments to house some of the employees who work in the nearby offices.

The dramatic growth of year-round hotels on Long Island during the past decade has left little room for further hotel growth. However, selected areas may require further additions to the hotel inventory. For example, as the University Hospital at SUNY, Stony Brook develops, there may be a need for additional hotel rooms to house the families of hospital patients. The growth of industrial and office space in the Yaphank area may also create the need for

additional hotel rooms.

Recommendations: Government and Taxation

The following recommendations will help to achieve economy and efficiency in government:

Currently, all property taxes in Suffolk County are collected in two equal payments. The first half is due by January 10 and the second half by March 31. This schedule does not coincide with the revenue needs of the school districts or the County. This results in excessive interest costs for the County and its school districts. The system of property tax collection and payment for municipalities and school districts in Suffolk County should be changed to a **2 + 2** system. Homeowners would pay their general (municipal, county, town, and special district) taxes in January and May. Their school tax payment would be split out and paid in September and March of each year. The school districts would receive the full amount collected in September and March. It is recommended that the Suffolk County Legislature prepare a home rule message requesting this change by act of the State legislature and that the town tax receivers in Suffolk County have the responsibility to distribute the property tax bill to property taxpayers.

Suffolk County should assume the responsibility for assessing property in Suffolk. This function is currently performed by the ten Suffolk towns which use different methodologies. This makes comparison difficult and equitable distribution of the tax burden

impossible.

Where there are fewer than 5,000 pupils in a school district, costs per pupil rise from $1,000 and $8,000 per pupil depending on size and composition of the district. Since school districts of 5,000 or more pupils are most cost-effective, it is likely that economies can be realized through significant school district consolidation.

The Salerno Commission recommendations should be implemented. These recommendations are as follows:

- The State should strengthen the linkages between the distribution of State aid and the needs of at-risk and disadvantaged pupils.
- The State should, where possible, increase its share of funding for the needs of at-risk pupils.
- The basic pupil count in the State aid formula should be redefined as a blend of enrollment membership and attendance.
- All available Federal education resources should be tapped to serve the needs of the pupils in the State.
- The basic pupil count used in the allocation of aid should reflect the educational burden placed on a school district by the pupil population it serves. Moreover, the weightings used to modify the pupil count should have a programmatic and fiscal basis. In this regard, the following pupil need issues need serious examination: enrollment versus attendance, measures and

weightings of pupils with disadvantages, including achievement and socioeconomic measures, the existing pupil weightings, new weightings, such as other grade levels.

- The State should improve the quality of assessment practices.
- The State should develop transitional mechanisms to cushion drastic shifts in property values.
- The State should enact mechanisms to assure that regional differences are appropriately accounted for in the aid formula.
- The State should study the use of a poverty factor in calculating the combined wealth ratio.
- The State should study alternative wealth bases.
- The State should study income per taxpayer or per capita, as opposed to income per pupil, as an element in the measurement in ability to pay.
- The State should study refinements in the pupil divisor in the ability to pay measure.
- The State should study instituting region-wide taxing systems.
- The State should examine the State aid system so that it can be redesigned to explicitly address regional cost differences and regional ability to pay variations.
- The State should develop and validate a feasible methodology to measure the variation in unavoidable

education costs (not based on expenditures and not offset by ability to pay) for incorporation in the State aid system.

- The State should recognize that a number of the idiosyncratic features of the current State aid system (e.g. save harmless and borough aid) have been designed to address specific inequities in the existing system.
- The State should develop sound and auditable mechanisms to insure that State aid for education is spent on education in all districts in the State.
- The State aid system should continue to include the concept of a minimum State aid guarantee to all districts. The State should exercise great care in its imposition of mandated functions, taking into account both State and local government resource scarcity.
- The State should study mechanisms that recognize the additional burden faced by small districts as a result of their inability to capitalize on economies of scale (though the Tax Commission strongly endorses the consolidation of many of these districts on Long Island).
- The State should modify the design of categorical aid programs so that they include a minimum level of funding for all districts that qualify for the program.
- The State should reduce the burden of reporting requirements for categorical aid (for example by

permitting districts to use a single report for several categorical programs).

The school district real property tax on residential property on Long Island should be replaced with a graduated income tax, which would include a formula for equitable distribution of tax revenues. This would be beneficial to most homeowners. The non-residential property tax should be continued, and the dollars derived from that tax pooled and distributed on the same basis as the income tax.

As the provision of elementary and secondary school education is constitutionally a State function, the costs of such education should be funded 100 percent by the State. This recommendation should be subjected to statewide referendum. Since costs of living differ among regions of the State, the distribution of funds should take account of such differences. Property taxes should no longer be available for such funding.

Every effort should be made to end social service functions performed by school districts in duplication of existing County services.

There should be a common voting date for all school districts in Nassau and Suffolk counties. The lack of voter turnout at school budget votes is caused, in part, by the fact that so few voters are aware of the times and dates of the various budget votes. A common voting date would encourage larger voter turnouts.

There is a huge disparity in costs between the one Nassau County BOCES supervisory district and Suffolk County's 3 supervisory districts. For the 1991/1992 school year, Suffolk's total BOCES costs were $187.7 million, while BOCES services in Nassau County were approximately $105.6 million, an $82.1 million difference. A significant share of the cost difference was due to the large administrative structures that cost approximately $2.7 million, $10.1 million, and $11.1 million in Suffolk BOCES 1, 2, and 3 respectively (1991/1992), for a total Suffolk BOCES administrative cost of $23.9 million. This compares with the administrative costs of the Nassau BOCES of approximately $14.9 million, a $9 million difference.

The three Board of Cooperative Education Services (BOCES) supervisory districts in Suffolk County should be merged into one supervisory district. The Commissioner of Education has already merged two of the three districts.

Currently, State law requires BOCES to submit an application to the State for approval of a program if only two component school districts request such a service. This minimum of two school districts results in a proliferation of services and subsequently has led to the utilization of services by school districts that have not previously required them. At least twenty-five percent of all component school districts should request a service before BOCES can submit an application for approval by the State. The intent of this change is to establish a minimum level of demand for the joint provision of services.

An audit mechanism should be established by the State Education Department to ensure that BOCES functions are properly audited and made available to the public for inspection. One of the most troubling aspects of BOCES operations on Long Island is the lack of fiscal and program oversight of BOCES functions by outside agencies and the general public. Oversight is greatly impeded by the lack of coherent, concise documentation of BOCES activities which prevents comparative evaluation of programs and costs.

The use of BOCES itinerant services should be expanded as a means of saving money for school districts. Itinerant services are services in which BOCES personnel are used as part-time employees to render services in two or more school districts. Itinerant services are generally regarded as less expensive than in-house services because no rent or capital expenditures are required. Itinerant services appear to be underutilized by Long Island BOCES, accounting for only approximately 3.6, 2.2, and 1.5 percent of total expenditures in Suffolk BOCES 1, 2, and 3 respectively and 0.5 percent in Nassau BOCES.

The Nassau County budget deadline for submission by the County Executive should be changed from the First Monday after the first Tuesday in November to October 1st. The current deadline for the submission of the budget in Nassau is November 9th, which is after election day. This allows for only approximately 2-1/2 weeks for public scrutiny before the budget hearings and 3 weeks for adoption (December 21st) after public testimony is given. By contrast,

Suffolk County's budget must be submitted by the County Executive in early September, which allows ample time for public scrutiny.

The twenty most expensive programs in the operating budgets of each county should be subjected to added scrutiny in the form of cost comparisons with other large New York State urban and suburban counties.

The counties should take steps toward establishing a unified purchasing network that would share contract lists among jurisdictions and discuss problems in shipping, standardization of quality and reliability of services. Bidding requirements are set at an unrealistically low level which requires excessive paper work and causes delays. Indexing to the rate of inflation would help overcome this problem.

General purpose governments on Long Island should shift to a two-year budget cycle. The spending plan that is adopted for the government entity would be for two consecutive fiscal years. Amendments could be made to the budget for the first year only in the first ten months of the year and for the second year by a vote of a supermajority of the legislative branch. The two-year budget should be proposed and passed in election years (odd numbered years) before the election takes place.

The idea of a two-year budget is a way of combatting the large year-to-year swings in the property tax levy in both counties due to election year pressures to cut taxes. By requiring a two-year budget cycle, a more stable, predictable property tax levy could be achieved. This would have a positive impact on the economy and

would allow homeowners and businesses to plan future expenditures more effectively in a stable tax environment. Currently, both counties have property tax levies that fluctuate wildly from year to year, apparently determined by the incidence of election years.

In delivering services to preschool handicapped children, it is recommended that independent evaluators be permitted to determine the needs of the child (including physicians, groups of professionals, school districts and hospitals). The main purpose of this recommendation is to separate evaluations from service provision. Each evaluation should be sent to the County for oversight purposes. The law should be changed to allow evaluations specifically tailored to the suspected disability of each child. Thus, a full battery of tests might be unnecessary. It is also imperative that County representation on the Committee on Preschool Education be strengthened. Children should not be transported any further than the nearest facility that meets their needs. If the State legislature fails to adopt these recommendations, the counties should be absolved from all financial responsibilities for the program.

Some government functions on Long Island, if privatized, would achieve savings. Areas that require special attention are: Off Track Betting, Nassau County Medical Center, Suffolk County Nursing Home, Nassau County Nursing Home, and all home health services. Public agencies and private firms should be eligible to compete against each other for a large, specified list of government functions and services. To avoid public employee unemployment,

governments could: match the rate of privatization to the rate of normal attrition; mandate that a winning contractor hire current government employees in that function and/or institute early retirement and other incentives to cushion the effect of privatization.

The local tax base should be broadened. One means of doing so is to promote business activity so as to ease property tax burdens. While maintaining sensitivity to the environmental consequences of construction projects, present impediments and delays in the approval process should be removed.

Evaluations should be made with an eye toward eliminating all commissions and boards that do not have statutory or charter responsibilities. In addition, all commissions and board created in the future should have sunset provisions as well as appropriate funding.

Nassau and Suffolk counties should expand the development of a digitized system of land mapping for all tax parcels in each county.

Certain administrative changes are needed. The budget offices of the Suffolk County Executive and the Suffolk County Legislature should be merged into one non-partisan office. The elective positions of Comptroller and Treasurer in Suffolk County should become positions appointed by the County Executive and approved by the County Legislature. One police academy should be established for both counties. Police patrols of interstate and state roads should be shifted from the county to the state. Civil defense or

emergency preparedness units at the county and town levels should be eliminated since most of their functions are currently performed by police and fire departments. All snow removal and street sweeping should be shifted from the counties to the towns.

Functions that are duplicated at two or more levels of government should be consolidated so that only one level of government provides the service or function. Appropriate compensation to the jurisdiction taking sole responsibility for the delivery of such services by those jurisdictions relinquishing service delivery should be made to ensure equity between government levels. Such services include but are not limited to Youth Services, Women's Services, Veteran's Services, Consumer Services, Drug and Alcohol Services, Industrial Development. Care should be taken to avoid the loss of Federal and State revenues.

A Regional Solid Waste Council should be created to provide for regional cooperation in the construction and/or development or enlargement of public and private facilities for the disposal of solid waste ash, compost and other recyclable materials, including incineration, and to consider and plan for the use and disposition of ash and compost and recyclable materials in a manner consistent with the New York State Waste Management Act.

Recommendations: Highway Transportation

The problem that confronts the Long Island is one of developing steady, dependable sources of highway improvement revenue over a long-term period and developing a method of choosing the order in which projects are implemented. Since improvement

needs currently exceed existing funding capabilities, it is recommended that criteria for project selection emphasize maintaining the economic viability of Long Island. This means improving service to commuters and facilitating the movement of commercial vehicles. This in turn, requires a multi-tier approach.

The first tier includes east-west arterials that serve intra-county and intercounty commuter and commercial travel. Capacity improvement funds should be allocated to these arterials first. They include the Long Island Expressway, the Northern and Southern State Parkways, Sunrise Highway, Veterans Memorial Highway, and Nesconset Highway.

The second tier includes the north-south state arterials that feed the east-west routes. These include state highways 110, 111, 112 and 231, Sagtikos Parkway, and County Roads 97, 83, and 46. The third tier includes other roads that directly serve or are within the major employment centers. It is recommended that capacity improvement projects for second-tier and third-tier roads take precedence over other road projects other than first tier projects.

In evaluating highway projects in eastern Suffolk, the important factors are seasonal traffic variations and year-round traffic due to increased residential development. There has been a deterioration of service on New York State Highway 27. Therefore, a bypass that would provide two additional lanes of capacity in both the eastbound and westbound directions is needed. One possibility is to eliminate rail service on the south fork and

use the railroad right of way for a highway. However, this option has serious problems. And, funding constraints suggest that a bypass is unlikely in the foreseeable future. One interim solution is the reconstruction of CR 39 and CR 39A from NYS 27 (west) to NYS 27 (east) to provide four lanes with left turn lanes at major intersections.

A number of major highway improvements are needed. There should be construction of continuous service roads along the Long Island Expressway to Exit 68, William Floyd Parkway. It is recommended that the Northern State Parkway be widened to six lanes to Veterans Memorial Highway and that Sagtikos Parkway be widened to six lanes between Northern State Parkway and the Heckscher Spur. New York State 347 should be widened to six lanes between New York State 454 and New York State 25A and grade separations should be built at New York State 454, 111, and 25 and County Road 97. New York State 454 should be widened to six lanes with the future possibility of eight lanes.

A continuous arterial highway between New York State 110 and LIE Exit 58 is needed. This route could run along the rights-of-way of Conklin Street, Long Island Avenue, Acorn Street, Pine Air Drive, Suffolk Avenue and Old Nichols Road. However, there are still major obstacles to overcome before a through route could be provided to NYS 110.

The 110 corridor is one of the most important commercial and industrial areas in Suffolk County. A six or possibly an eight lane section is needed north to New York State 25.

Although the traffic congestion problem on Long Island is primarily one of region-wide capacity, there are several low-cost methods of reducing congestion. These include staggered work hours, ridesharing and greater use of public transit. Such options should be pursued given the fact that the Long Island Tomorrow study estimated that $5.3 billion would be needed to eliminate all road deficiencies in Nassau and Suffolk Counties including pavement, bridges and safety deficiencies. Only $1.3 billion of this funding is likely to be available between 1990 and the year 2000. Moreover, Long Island has consistently received only a fraction of what it contributes in Federal and State gasoline taxes and motor vehicle-related fees in the form of highway improvement funds. Long Island needs assurances that funds for highway improvements will be available on a long-term basis, that Long Island will receive more of what it contributes in motor vehicle-related fees and taxes, and that on a statewide basis, improvements will be made first where the need is greatest. In addition, the possibility of a New York State income tax transportation surcharge should be investigated as a source of additional highway improvement revenue.